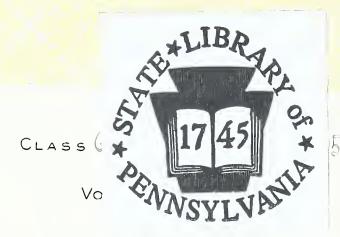


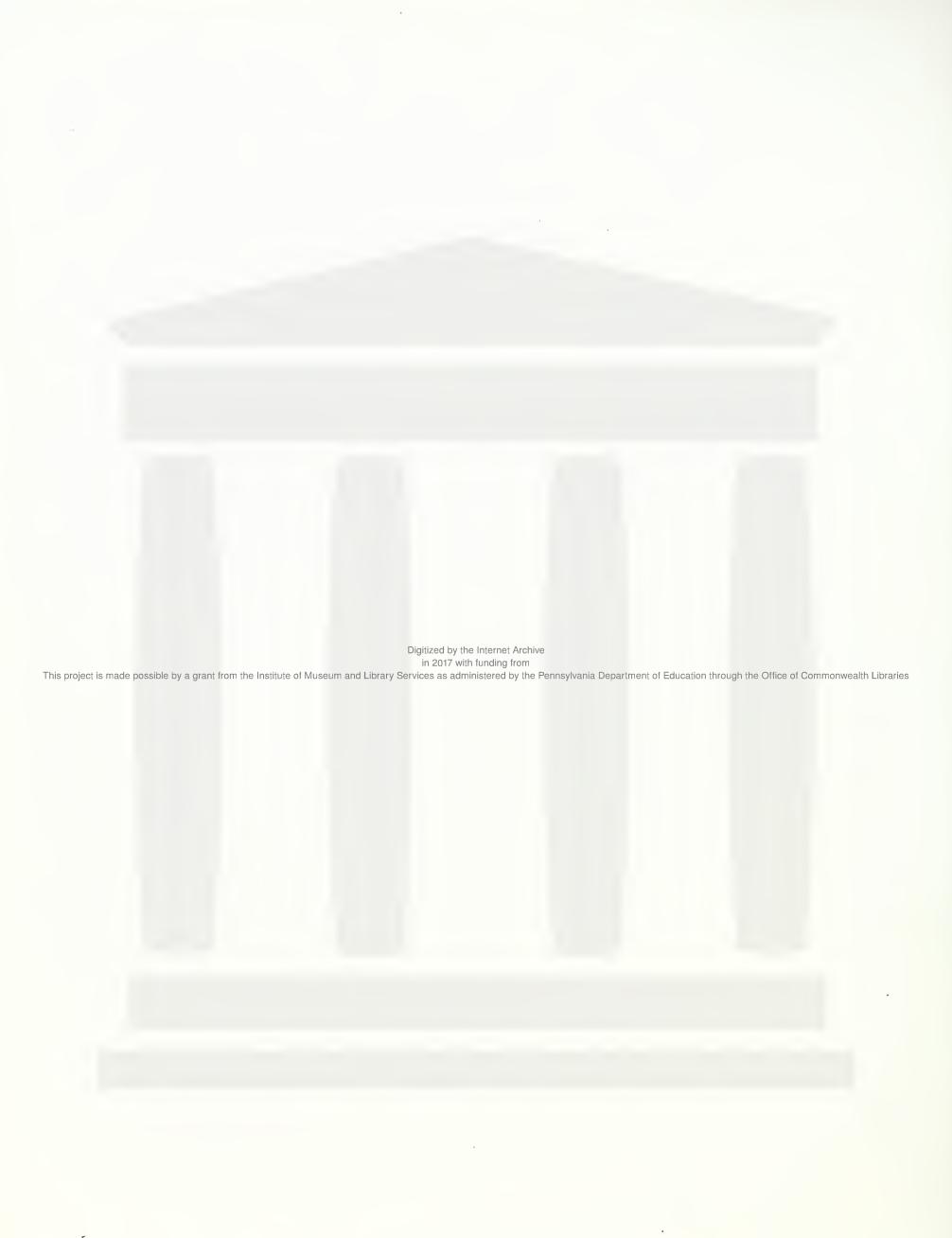
USE IN LIBRARY ONLY





PENNSYLVANIA STATE LIBRARY







Vol. XXIII. No. 1. }

Washington, D. C.—January 1, 1911.

AT WORK UNDER THE SEA.

By Frank C. Perkins.

many unique and novel appliances and is in a position to work under

before, many labor-saving devices three cylinder double-acting air pump, being utilized to improve conditions fitted with two indicating gauges to for him. A portable electric generat- denote the air pressure and depth. supplies current to a submarine arc Army Corps pump has two cylinders lamp, giving him that essential re- with water cistern around the cyl-

THE modern diver is provided with the helmet so that the diver may look drawers and woolen mittens together many unique and novel appliances, up and see what is taking place above, with diving mittens, of rubber, or up and see what is taking place above. with diving mittens of rubber or with lead or iron soles.

Instead of the two cylinder doubleacting air pump, a special three cyl- being made as follows: There is a ing plant driven by a gasoline engine The modern U.S. Navy and U.S. inder single-acting pump is frequently employed for supplying air to the diver for work in extra deep water, quisite, plenty of light. Submarine inders for cooling the air, and two fly- and is largely used by contractors

shown in the accompanying illustration (Fig. 1.) The advantage in this is The equipment of a modern American canvas and a set of belt weights with that the rubber insulated wire, one conwater to better advantage than ever diver consists of a two cylinder or detachable leads, also diving shoes ductor of which is contained in each of the three manila rope strands, is extensible, the insulator conductor central core of very high quality rubber and on this core the conductor, consisting of very fine wires, is wound spirally and the whole then insulated



FIG. 1.—ENGLISH DIVING EQUIPMENT.

rock drilling machines, operated by compressed air are employed, and a telephone life line is used for ship dock and harbor work, with receivers and transmitters which allow constant communication between the diver and his attendant.

Some of the helmets have three lights, one in the center in front and one on each side, while others have

wheels, the pump being packed in an oak chest with iron rings for lashing. A unique quarter turn screw helmet is utilized to receive the air in the head, and one with safety valve and adjustable regulating valve to receive air in the breast plate. The rubber diving dresses have cuff-expanders, chafing pants, with adjustable straps, and divers' stockings. The diver is

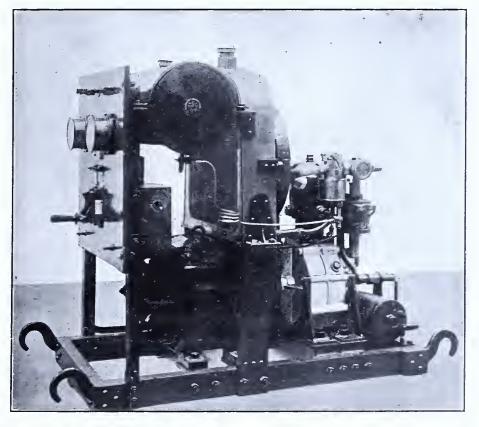


Fig. 2.—Electric Generator Set to Operate Submarine Arc Lamps.

and bridge builders in depths of water up to 90 feet. In some instances a two-cylinder lever air pump is employed for repairing dams, laying pipes, and examining ship's bottoms and for other similar work where the depth of water does not exceed 30 feet.

The air hose is supplied in three or

with high quality rubber. The conductor can be extended by 25 per cent of its length and the conducting wires remain unbroken. Previous to this English invention, the diver's life line contained insulated telephone conductors, the conductor generally being a single copper wire, and as soon as more pieces, 150 feet being usually of a strain came on the rope, the latter sufficient length for ordinary service. stretched considerably while the four lights, one placed in the top of provided with woolen shirt and A special English divers' life line is copper wire would do so only to a

very limited extent and finally break, communication thus being interrupted between the attendant and the diver, very often at the most critical moment.

The connections of a submarine arc lamp operated from any electric light or power curcuit, or from a portable gasoline electric generator set, are shown in Fig. 4. This diver lamp outfit includes a flexible water proof cable and a switch for throwing the current on and off the sealed electric arc lamp. - The latter consists of an upper chamber containing solenoid and clutch mechanism and a lower chamber which is enclosed by a glass globe sealed from the upper chamber by rubber washers. Inside the lower chamber is placed the inner globe and carbons. The lamp is 22 inches in



FIG. 3.—TELEPHONE LIFE LINE.

length over all and is encircled by a handle 9 inches in diameter. The metal parts of the lamp are of gunmetal and the glass globes are designed to stand a pressure of over 100 pounds per square inch, insuring safety up to a depth of approximately 240 feet. The feeder cable is led into the mechanism chamber through a rubber packed stuffing box, and when immersed the lamp is absolutely water tight.

The portable French alcohol or gasoline motor dynamo equipment for supplying current for submarine arc lamps is shown in Fig. 2. The engine, of four horsepower capacity, is operated at a speed of 1500 revolutions per minute and is directly coupled to a dynamo of two kilowatts capacity, supplying a current of 18 amperes at a pressure of 110 volts. This equipment is provided with a switchboard and a tank holding five gallons of fuel. An electric regulator is provided which controls the alcohol or gasoline and air supply to the engine cylinder according to the load on the dynamo, the latter being capable of operating 60 lamps of 10 candle power each. It is stated that the fuel consumption is less than one pint per horsepower per hour, making the cost of operation exceedingly low, the equipment generating the current well within practical limits even when operating with alcohol as a fuel.

From the fuel tank the spirit flows to the carburetor, and from there the vapor produced passes automatically

to the explosion chamber of the motor, where it meets the electric spark. The engine is meanwhile automatically lubricated in every part from glass cups, so that is impossible that this very important point should be overlooked. There is little noise and no perceptible heat or odor, and the whole apparatus is clean and not unsightly. The engine is maintained at a suitable temperature by water circulating around the cylinder.

It may be of interest to note some of the remarkable records in deep sea salvage, including the recovery of a half a million dollars in treasures from the steamer "Alphonso XII" which was sunk in 180 feet of water, and \$100,000 recovered from the "Hamilla Mitchell" sunk in 160 feet of water.

A Spanish mail steamer named the "Alphonso XII" belonging to the Lopez Line bound from Cadiz to Havana, sank off Point Gando, Grand Canary, in nearly 30 fathoms of water and about a mile off shore. She had on board treasure valued at £100,000, which lay in a room about 262-3 fathoms below the surface. The underwriters, who had insured this treasure, organized a salvage expedition which was despatched to the scene of the wreck. The treasure room was in the run of the ship, at a depth of 160 feet, so that the task of salving was an unprecedented one. The operations were persevered in for six months and the box of specie finally recovered.

The ship "Hamilla Mitchell" was lost on the Leucinna Rock near Shanghai, having a heavy cargo and specie to the amount of \$250,000. Lloyd's agent was instructed by the underwriters to visit the scene of the wreck and inform them as to the feasibility of recovering the treasure. His report was that he considered the cargo and treasure irrevocably lost, as the depth of the water was great and the position too dangerous for working. Captain Lodge, however, undertook the task, and with two experienced divers, left England and duly arrived at Shanghai, and proceeded in search of the wreck. The operation had to be prosecuted by means of a small boat, as the larger vessel could not proceed so close to the high rocks. After a search in different depths, varying from 120 feet to 160 feet of water, the divers at length found the wreck. The after part containing the treasure had rolled into deep water, 26 fathoms or thereabouts, for it appears that when the "Hamilla Mitchell" struck the rock she rested on a ledge, but subsequent gales caused her to part amidship, the after part rolling in deep water. After some difficulty one of the divers, Ridyard, succeeded in obtaining access to the treasure room, when he found that some of the dollars were lying in heaps, the worms having eaten the wooden boxes so that they were completely riddled. He made four trips and worked four hours consecutively under water, sending up

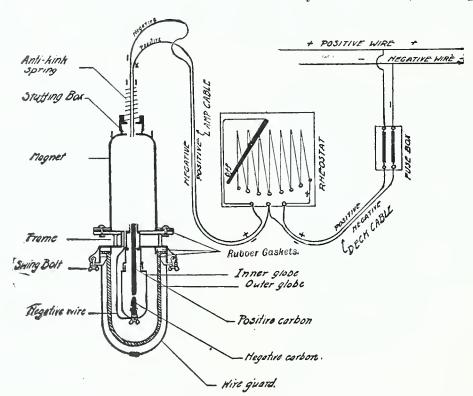


Fig. 4.—English Submarine Arc Lamp.

The same diver, Alexander Lambert, who recovered so much of the bullion from this wreck is the one who performed the exceedingly daring feat of stopping the flooding of the Severn Tunnel. A certain door in the drainage tunnel had inadvertently been left open. It was situated a quarter of a mile from the shaft, and the brave fellow equipped in his diving dress crept that distance through a narrow passage full of water and closed the door. This enabled the pumps to overcome the volume of water which was flooding the pit, and the completion of the tunnel was proceeded with.

the contents of 64 boxes of treasure. He returned to the boat exhausted from having worked so long at the great depth mentioned—a feat never before performed by a diver. As he was thirsty, the other diver, Penk, volunteered to ascend to the top of the island to fetch him some spring water. While filling the bucket he looked round the horizon, and to his astonishment saw innumerable white sails coming from the mainland. He informed Captain Lodge of the circumstances and the latter identified them as piratical junks. Orders were given to slip the anchor and chain, but the wind being light they were

obliged to make use of oars. Although in an exhausted condition, Ridyard pulled until a breeze sprang up, when they were enabled to make sail, and with the aid of night they reached Shanghai safely, running a very close risk, not only of losing the treasure but also their lives.

New Torpedo Boat.

The United States is now in possession of a torpedo boat of a radically new design which threatens to revolutionize construction in this line. It is known as a subsurface boat, something in the nature of a compromise between the ordinary torpedo boat and the submarine. It is estimated that 50 of these vessels can be built at the same cost as two or three submarines, and should half a hundred of them set about to send a huge battleship to the bottom, naval experts declare that flight would be the best move on the part of the battleship. In short, the new craft is a torpedo suspended from an unsinkable surface hull, divided into compartments all packed with cellulose. A description of its construction is contained in a recent number of Popular Mechanics. The front of the subsurface portion of the boat contains all the machinery in addition to the powder charges, so that if the entire upper part, except the conning tower, were shot away, the two men who compose the crew coul still operate it. The powder charge in the forward end of the submerged portion contains 1000 pounds of gunpowder.

In operation the crew navigates the boat within what may be considered sure striking distance of the hostile ship. The helm is then locked and the prow is pointed at the mark, and the engine set at full speed ahead. The crew is expected to abandon the boat at this juncture in small boats or life buoys. The length of the submerged or torpedo hull is about 30 feet, as compared with the 16 feet of the ordinary torpedo, and it carries about eight times the explosive charge. An eight cylinder gasoline engine is located on the midships portion of the submerged hull. It is capable of developing 150 horsepower. The engine and rudder are controlled from the conning tower directly above the surface hull, which communicates through a hatchway with the engine compartment. The rudder is situated in the V-shaped space between the sterns of the two hulls. The conning tower is protected by heavy armor, which is also extended over the floor as additional protection to the power plant below. The surface hull itself is 45 feet long, with a beam of 5 feet, and the weight is six tons. The surface hull is protected by the cellulose packed within its double walls, which makes it unsinkable and practically immune from serious injury by small guns. Its speed is 18 knots an hour, and its cruising radius 200 miles, which confines its work to coast defense, though it would be possible for warships to carry a number on deck, launching them over the side when necessary.

THE INVENTIVE AGE contains sound advice to inventors and patentees. For lack of such advice many have lost money. Subscription price, one dollar a year.

SELF-LIGHTING ALARM CLOCK.

The accompanying illustration and It may be seen that it consists essendrawing show the details of connection and method of operation of a novel self lighting electric alarm clock, designed by Rene Dubosq, a professor of philosophy of Bayeaux, France, which is most interesting and practical.

Every one knows how difficult it is, especially on cold winter mornings, to tear ones' self from the waimth of a bed.

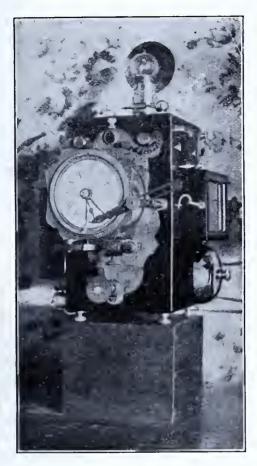


Fig. 1.

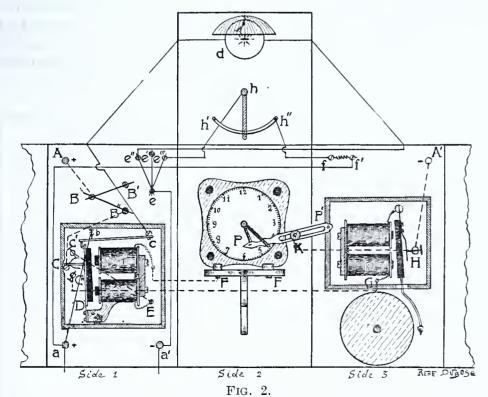
The ordinary alarm clock, in unrolling the spring, causes the gong to ring; but the duration of this is comparatively short, and it is possible to lapse again into slumber. It has therefore been thought that by using

tially of a box 41 inches by 41 inches by $4\frac{7}{8}$ inches, just sufficient to contain a Leclanche cell of 5 1-3 inches or two pocket accumulators. In front of the box, on a pedestal, is placed an ordinary mechanical alarm clock, always movable, having received no other modifications than the adding of a little copper brush at the extremity of the hour hand so as to operate the disengager. On the sides and cover are arranged the operating parts.

Fig. 2. shows in detail the scheme of connections. On side 1 is the engaging device, on side 2 the alarm with the index for actuating it, and on side 3, the bell. The interior terminals AA^1 are once for all attached to the poles of the Leclanche cell placed in the box. The switch B having been brought to its contacts B^{11} the current descends to the pivot C of the horizontal lever; by the contact C^1 runs through the coils of the electromagnet and by F passes the body of the alarm.

If the night before one has placed the actuating index PP^1 so that the hour hand of the alarm will meet the terminal stop at the hour at which he desires to be awakened, at the moment of contact the current passes from the battery cell by K, H and A^1 . At the same moment the electromagnet attracts the vertical disengaging lever D. This attraction disengages the horizontal lever C which brakes contact C^1 and falls in C^{11} ; and the current thrown in the circuit $C^{11}G$ will then freely work and the bell continue to vibrate until the sleeper rises to cut off the circuit in bringing the watch B to B^1 .

This electric alarm clock has also been arranged so that an engaging lever closes a lighting circuit at the same time it sounds the alarm, as in



electricity the ideal alarm clock could be realized.

The accompanying drawing Fig. 1. represents the apparatus as it stands on the mantel piece of its inventor. winter the darkness of the early morning hours might be an excuse for prolonging sleep.

In the self-lighting arrangement, a second circuit has been disposed along

the sides of the box, commencing at telegraph and telephone apparatus, the two exterior terminals and connected to goles of a pocket bettery that can be easily hidden in a pedestal.

In this equipment, seen in Fig. 2, a third lever has been also added above the electromagnet. It engages itself in the extremity of the disengaging lever D and permits thus the lighting of lamp b. From a the circuit goes up to b; if the lever is moved the circuit will be opened and the lamp will not be lighted. As soon as the hour hand has met the stop of the actuating index, the electromagnet will attract the disengaging lever D, and the contact will establish itself in b. The current will then freely pass from c to lamp b and come back again by $e^{11}e$ to the terminal outlet a^1 . At the same time as the bell vibrates the brilliant light of the lamp will fill the room, effectually rousing the sleeper.

Wireless Direction of Railroads.

Next to its employment at sea, the wireless system of communication may find its widest field of usefulness on our great railroad lines. Some years ago a series of experiments were begun in the Union Pacific shops at Omaha, and Dr. Frederick H. Millner, who has been in charge of the work, now states that a wireless system of communication between stations is perfected. Success has likewise crowned efforts to communicate between stations and running trains. Work is already under way, says Popular Mechanics, on a main plant at headquarters and two branch plants, one in Nebraska and one in Wyoming. These stations are approximately 200 miles apart, too widely separated to be of much service except when the wires go down. To any one at all familiar with the operation of a railroad, it is obvious that it would be impossible to carry on the traffic of a great transcontinental system with telegraph stations 200 miles apart. But these stations are only the foundation of a still greater and more intimate utilization of the wireless-communication direct between the engineer and the dispatcher.

While Dr. Millner was working out his system of wireless telegraphy he was also applying the same efforts toward solving the problem of a wireless telephone by which it would be possible to communicate with running trains. The wireless telegraph was the foundation of Dr. Millner's scheme, and he perfected that first. The wireless telephone is the superstructure. When the wireless telegraph stations are in operation the telephones will be ready to install, and thus there will be a double safeguard. But Dr. Millner was not quite satisfied with even this, so he added an insurance policy, as it were, in the shape of an electric cab signal to work in connection with the block signal system already in use. The cab signal also works by wireless electricity, showing the movements of the signals at each end of the block upon which the train is running. The cab signal was an incidental discovery while Dr. Millner was working on his

and just for the present it is lying aside for future development.

As it will be worked in practical operation, the chief dispatcher at headquarters will issue his orders and send by wireless telegraph to the division dispatcher. The latter makes up his chart and from his office telephones his orders to the engineer and the conductor. No chance is allowed torun by a station where important orders wait, no chance for the operator to sleep while the night express thunders by to meet the limited between stations, and fill the news columns next day with the list of the dead and injured. The dispatcher has every train right under his thumb, and when the engineer disobeys orders he is rounded up with a jerk. He cannot 'plead misreading of orders. There is only for him the confession of gross criminal carelessness when something happens that should not.

In conducting his various experiments, Dr. Millner has achieved some remarkable results. In his work he uses one of the largest transformers built for wireless use, 40 per cent greater in capacity than the Marconi machine at the Newfoundland station. "Feeling" through space, he has often caught messages from ships at sea, conversed with West Indian stations, and even with the harbor of Havana.

In the experiments with telegraph, telephone and cab signals, he used an old switch engine, equipped with antennae suspended from insulated posts on the roof of the cap. While he sat in his laboratory in the boiler shop, one of his assistants rode on the engine and conversed with him either by telegraph or telephone. Finding that antennae were liable to damage on a running engine or train, Dr. Millner did away with them entirely, and his later experiments were conducted simply by insulating the metal roof of the cab and running wires from that to each of the devices. The "ground" is made through the

Beyond the bare facts, little information is given out about his discoveries, either by Dr. Millner or the Union Pacific. One reason is because these devices have a high patentable value. In a general way, it may be said that the apparatus works on the same principles as the Marconi and De Forest systems. The wireless telephone at first glance looks like the commoner styles of an Edison phono-

In odd moments, the inventor constructed a truck to run around the Omaha yards, operated by power sent through the air from the boiler shop. He believes that it can be made to switch freight cars. He also thinks that a lot of good copper is being used for trolley wires to run cars that might just as well be run by wireless. Then there are miles of electric light wires that clutter up the city streets and go out of commission when the conduits getfull of water. Why not use wireless there too? Omaha's big auditorium is lighted up by electricity that comes through the air from a station five miles away. But these are small things compared to the wireless telegraph and telephone and cab signal in practical operation. With them in use, only the tearing up of the track or its burial beneath several feet of snow or some such unpreventable catastrophe can interrupt the operation of trains.

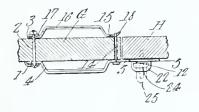
140866

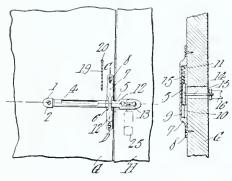
CLEVER NEW PATENTS.

Door Latch.-Down Spout.-Railway
Track Bolt.

Door Latch,

A latch which can be applied to either a swinging or a sliding door, and will hold the door securely fastened, and which can also be employed to secure a swinging door in open position is embodied in a patent issued to Enoch S. Wheeler, of Centralia, Wash. The latch, as shown in the accompanying figures, which





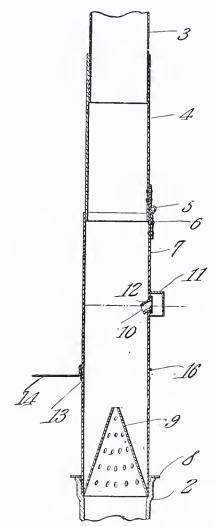
illustrate a front elevation of the latch on a door, and sections of the same, consists of a recessed pivot block secured to one face of the door by a screw which extends through the door and through another plate on the other side. A latch strip 4, bent out in the middle to form a handle, is pivoted on the bolt 2, and a tongue 5 extends from said middle portion and slides in slots 6 of a guide plate 7. Ears 8 extend from the ends of this plate and are screwed to the door, there being upward and downward recesses in the plate communicating with the slots. Stems 10 extend from that portion of the tongue 5 in the slots 6, and are adapted to work within recesses 9, the upper stem being provided with a coiled spring 11 which bears up against the plate 7 and down on the tongue 5, so as to hold the latter in contact with the end walls of the slots. The tongue 5 laps the jamb, and has shoulders in which is a slot to receive the keeper. A stem 14 projects from the tongue through a slot 15 in the door, the free end of the stem being attached to a handle 16 which has a slotthrough which the bolt extends, so as to permit the handle to have a short sliding motion as well as a pivotal movement. An actuating cord may be connected to the handle, and pass through an opening in the door. The keeper has a threaded stem with a head and a transverse shoulder, the portion between the shoulder and the free end of the head being concave and inclined downward. An opening 24 is formed in the head to receive a padlock.

When the door is shut, the upper wall of the slot 13 touches the upper

face of the keeper and the latch strip will be elevated and the spring 11 placed under stress. When the latch strip passes the shoulder the spring will shift it downward back of the shoulder so as to keep the door from opening. By swinging the door open to its greatest extent, the apertured portion of the latch strip can be caused to move into engagement with the keeper on the wall, and the door be thus held open till released.

Down Spout.

The drawback to the use of waterspouts is that they are very likely to become clogged with the trash that washes off the roof, so that the water, instead of flowing off properly, is dammed up and overflows in a most inconvenient manner. A device intended to obviate this difficulty has just been patented by Emilio Cardarelli, of Boston, Mass. The spout has a strainer which will separate the trash from the water, and means are also provided to permit overflow of the water when the strainer itself is clogged. The spout, as seen by reference to the accompanying illustration, has a sleeve 4,



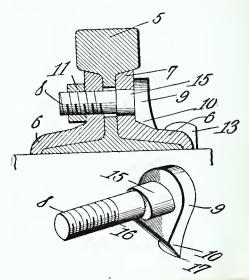
hinged to the upper portion of a tubular screen casing 7, the lower end of which rests in the bell 2 at the upper end of the pipe, and has an annular flange 8 designed to bear on said bell. A conical screen 9 is secured in the casing 7, and the outlet opening is placed above this screen, there being a hood 11 on the outer face of the casing and extending over the opening, the hood being open only at the bottom. A shield 12 extends inwardly from the casing and around the opening, and is inclined down-

ward toward its inner end. A band 13, embracing the casing, has a spur 14 to be driven into the wall, and hooks on the ends intended to engage a tie device, to bind the band tightly on the casing. The rain water passing through this device flows through the screen, and trash is separated from the current. If the screen becomes clogged, the water backs up and overflows through the opening 10, the hood 11 directing it downward. When it is desired to clean the screen, the tie device is detached, the sleeve and easing moved up till the casing clears the bell, and the casing swung upon its hinge, so that the sleeve can be removed from the down spout. The casing can then be inverted and the trash removed. The shield 12 prevents water flowing downward within the casing from escaping through the opening.

Railway Track Bolt.

The increased attention now being paid to safety appliances and devices to lessen the number of accidents in various forms of industry, lends interest to a bolt for railway tracks, recently patented by Wm. L. Bogle, of Columbus, Miss. Railway disasters are among the most frequent and appalling in any line of enterprise, and the importance of keeping the track in good condition is admitted. The bolt above referred to is meant to connect angle bars or fish plates of track joints, and has an enlarged head fitted flat against the web of the fish plate and closing the hole therein against entrance of water, the lower edge of the head conforming to and bearing against the angle bar, thereby preventing vibration of the nut when trains pass. The invention will be readily understood from the cuts, which show a transverse sectional yiew and a detail perspective of one of the bolts detached. The fish plates 7 are each provided with a web having a flat outer face and a lateral, downwardly inclined flange 6, bearing on

the correspondingly inclined face of the base flange of the rail. Each of the track bolts 8 has an enlarged head 9, resting flat on the web of the fish plate. The upper portion of the head is curved, and the lower part has an extension 10, the edge flared and beveled to conform to and adapted to bear against the upper face of the flange 6 of the adjacent angle bar, preventing rotation of the nuts 11 incident to the passage of cars. That portion of each bolt next to the head 9 is elliptical in cross section, to engage a corresponding recess in the angle bar, which also prevents ro-



tation of the bolt. The part of the bolt that extends through the web of the rail is cylindrical in cross section, and its terminal is threaded to engage clamping nuts 11, the shanks of the bolts being of a size to permit longitudinal movement of the rails, to allow for contraction and expansion. The construction not only prevents the nut from working loose, but it reduces friction and forms a firm support for the bolt, so as to prevent the head of the latter from becoming severed by contact with the car wheels in case of derailment of the forward car in a train, thus preventing spreading of the rails at the joints and derailment of the remaining cars.

PATENTS

Send Your Business Direct to Washington Saves Time and Insures Better Service.

Trade Marks, Copyrights and Designs. My office is close to the U. S. Patent Office. Personal attention given—OVER THIRTY YEARS PRACTICE. Book "How to Obtain Patents," etc., sent free. Patents procured through E. G. Siggers receive special notice, without charge, in the—

INVENTIVE AGE

Illustrated Monthly-Twenty-third Year. Terms, \$1.00 a Year.

E. G. SIGGERS,

918 F STREET, N. W., WASHINGTON, D. C.

LATEST COURT DECISIONS IN PAT-ENT, COPYRIGHT AND TRADE-MARK CAUSES.

HOHMANN & MAURER MFG. CO. et al. v. CHARLES J. TAGLIABUE MFG. CO. et al.

(Circuit Court, E. D. New York. Nov. 26, 1909. 175 F. R. p. 87.)

1. PATENTS-VALIDITY — CLAIMS EMBODY-ING DISTINCT INVENTIONS.

A patent should not be held invalid because each of its claims might have been made the basis of a separate application, where all relate to improvements in a single instrument and may in a sense be considered elements of one construction.

2. PATENTS - CONSTRUCTION-USE OF GEN-ERAL LANGUAGE.

General language used in the claims of a patent relating to a limited field is merely general as to this limited field, and should not be held to render the claims indefinite because, as a matter of literary composition, the same language might be applied to some other field, if the public would not thereby be deceived.

3. PATENTS-INVENTION-THERMOMETERS.

The Maurer patent, No. 525,915, for improvements in thermometers intended to register high temperatures, claim 4, which covers "a long stem thermometer having insulation applied to the stem of the mercury tube from the bulb to the thermometer head," in view of the prior art and its gen-eral language, is void for lack of invention.

ANTHRACITE SEPARATOR CO. v. POLLOCK et al.

(Circuit Court, M. D. Pennsylvania. Dec. 31, 1909. 175 F. R. p. 108.)

1. PATENTS — VALIDITY AND INFRINGEMENT — COAL SEPARATOR.

The Pardee patents, Nos. 629,590, 629,591, and 629,592, each for an ore and coal separator, specially designed for use in an anthracite coal breaker, and consisting of a sharply inclined spiral way or chute into which the coal is dumped, having the floor inclined toward the axis, which operates to separate the coal from the slate and bone during their descent by reason of their different specific gravity and frictional resistance, were not anticipated, and disclose invention; also held infringed.

2. Patents - Prior Use - What Con-STITUTES.

A prior use, in order to negative novelty in a later patented device, must be some-thing more than an accidental or casual one, and must be so far understood and practiced or persisted in as to contribute to the sum of human knowledge and be accessible to the public, becoming an established fact in the

CAMPBELL v. NEW IDEA ARC LIGHT COMPANY.

(Circuit Court, S. D. New York, June 23, 1909. 175 F. R. p. 115.)

1. Patents — Infringements — Defenses -Validity—Pleading.

Where, in a suit for infringement of a patent, the only defenses pleaded were that complainant's alleged original invention was in extensive use throughout the United States for more than two years prior to the dates pleaded as those ou which the applications for patents were made, and a denial of infringement, the court will be concluded as to the validity of the patent, in view of the prior state of the art, by the presumption in its favor arising from the grant of the patent.

2. PATENTS-ADJUSTMENT OF APPLIANCES -Dedication to Public.

Where complainant put into public use certain unsuccessful gas lamps, which, while resembling in external appearance his subsequent patented lamp, did not embody the nice adjustment of parts which was the gist of the patent subsequently obtained, the patent was not invalidated by a prior dedication of the patented article to the

SUB-TARGET GUN CO. v. HOLLIFIELD TARGET PRACTICE ROD CO. et al.

(Circuit Court, S. D. New York. Jan. 20, 1910. 175 F. R. p. 119.)

PATENTS - INFRINGEMENT - RIGHT TO IN-JUNCTION—ESTOPPEL.

Complainant's assignor having applied for a patent on a gnn target device before plaintiff's patent was issued, complainant submitted to the War Department full detailed drawings of the invention, that it might advertise for open bids for the manufacture of a quantity of the devices; complainant hoping that it might itself obtain the contract therefor, and with knowledge that the government must advertise for open bids. The contract was obtained by defendant, and the patent granted. Held, that complainant was not entitled to a temporary injunction restraining defendant from manufacturing the device for the government under the contract on the theory that it would constitute an infringement of the patent.

GLASER et al. v. ST. ELMO CO. Inc., et al. (District Court, S. D New York. Dec. 20, 1909. 175 F. R. p. 276.)

1. Copyrights—Expiration—Novels.

On the expiration of the copyright of a novel, any person may use the plot for a play, copy or publish it, or make any other use he sees fit.

2. Copyrights—Expiration—Plays.

Wherea copyrighted play had been made, based on the plot and incidents of a rovel the copyright of which had expired, another author, though entitled to use the plot and incidents of the novel for a different play, could not make use of the first play in constructing the second.

3. Copyrights—Books—Title.

The copyright of a book does not prevent others from taking the same title for another book, though the copyright has not expired.

4. Copyrights-Name of Book-Expira-TION-PLAY.

Where a copyrighted play was taken from the novel "St. Elmo," the copyright of which had expired, the owners of the play were not entitled to restrain defendants from using the same name for au entirely different play constructed on the plot and incidents of the novel, on the theory that the name was protected by the copyright of the

5. TRADE-MARKS AND TRADE-NAMES-UN-LAWFUL COMPETITION.

Where complainants used the name "St. Elmo" as the name of a copyrighted play based on the plot and jucidents of the novel by that name, the use of the same name by defendants ut the production of a different play constructed from the same novel, in connection with a notice, however, that defendants were the authors and producers, and that it was not complainants,' did not constitute unlawful competition. .

STERN et al. v. JEROME H. REMICK & COMPANY.

(Circuit Court, S. D. New York. Jan. 14, 1910. 175 F. R. p. 282.)

1. Copyrights—Infringement—Intent.

Where defendant published a copyrighted song with knowledge of the copyright in his intent was not material to his liability for infringement.

2. COPYRIGHTS-NOTICE - DATE-PUBLICA-TION IN ROMAN NUMERALS.

A copyright notice is not invalidated by the publication of the date of copyright in Roman instead of Arabic numerals.

3. COPYRIGHTS—PUBLICATION.

The deposit of two copies of a copyrighted song in the Librar of Congress, certainly when coupled with an unrestricted sale of a single copy, without any effort to push the work commercially, constituted a sufficient publication to sustain the copyright.

INDEPENDENT BAKING POWDER CO. atus for charging liquids with carbonic acid v. BOORMAN.

(Circuit Court D. New Jersey, Jan. 20, 1918. 175 F. R. p. 448.)

1. TRADE-MARKS AND TRADE-NAMES-AS-SIGNMENTS--VALIDITY.

A manufacturer cannot make a valid assignment of a trade-mark separate from a

transfer of the good will and business in connection with which it was used.

2. TRADE-MARKS AND TRADE-NAMES-AS-SIGNMENT-VALIDITY.

Manufacturers of a baking powder, which they sold under four or five different tradenames, assigned one of such names to another, with the right to use it as a trademark for baking powder, but continued as before to manufacture and sell the same product under some one of the other names. Held, that the trade-mark could not be so separated from the product with which it had been associated, and that the assignee acquired no exclusive right thereto which he could transfer.

3. TRADE-MARKS AND TRADE-NAMES-EX-TINGUISHMENT-APPLICATION TO DIFFER-ENT PRODUCT.

A manufacturer of a baking powder in which the acid constituent was alum, and which was sold under the name "Solar" as a trade-mark, lost all rights it possessed in such trade-mark by transferring it to a baking powder in which phosphate was sub-

4. TRADE-MARKS AND TRADE-NAMES-PER-SONS ENTITLED—NATURE AND PURPOSE

Manufacturers of baking powder, which they sold under different names, used the name "Solar" thereon when they desired to sell at a reduced price to meet competition, at other times selling the same article at a higher price under oue of the other names. Held, that such use of the name was not for true trade mark purposes, and that no trademark rights were thereby acquired therein which would be protected by a court of equity.

BROWN BAG FILLING MACH. CO. v. DROHEN.

(Circuit Court of Appeals, Second Circuit-Jan. 11, 1910, 175 F. R. p. 576.)

1. Patents - Suit for Infringement -MEASURE OF PROFITS.

The profits realized by a defendant from the use of an infringing bag filling machine were properly computed on the basis of the saving as compared with the cost of filling by hand, where there was no prior machine which would do the work.

2. Patents - Infringement - Recovery of Damages.

Where the defenses of invalidity of the patent and noningringement in a suit for juringement of a patent presented debatable questions, and it does not appear that defendant was actuated by malice or bad faith, there is no reason for permitting the recovery of damages justead of profits for infringement, and especially for increasing the damages under the statute.

LIBERTY v. CHAMPION-INTER-NATIONAL CO.

(Circuit Court of Appeals, First Circuit, Jan. 27, 1910. 175 F. R. p. 780.)

PATENTS-INFRINGEMENT-PAPER DRYING MACHINE.

The Liberty patent, No. 629,696, for a lathcarrying device for paper-drying machine, claim 2, which specifies as an element of the combination "hoppers for feeding the said laths," must be read in the natural sense of the terms, and is limited to a machine employing a plurality of hoppers, and is not infringed by a machine having a single hopper.

JOSEPH SCHNEIBLE CO. v. EBLING BREWING CO.

(Circuit Court, S. D. New York, Jan. 12, (Circuit Court, D. Maryland, Jan. 22, 1910. 1910, 175 F. R. p. 781.)

1. Patents — Infringement — Apparatus FOR CHARGING LIQUIDS WITH CARBONIC ACID GAS.

The Theurer patent No. 505,240, for appargas, claim 3, in view of the prior art, discloses invention. Also held infringed.

2. PATENTS - SUIT FOR INFRINGEMENT -

Where a corporation commenced suit for infringement of a patent at once on becoming its owner, the fact that its president had beeu in effect the owner for four years, with

knowledge that defendant was making and selling the alleged infringing articles, did not constitute such laches as to debar complainant from relief.

3. PATENTS - SUIT FOR INFRINGEMENT -

Delay in the prosecution of a suit for in-

fringement of a patent after it has been commenced, with the acquisscence of defendant, will not be considered taches such as to defeat a recovery.

AUTO SPRING REPAIRER CO. v. GRINBERG et al.

(Circuit Court, S. D. New York, Jan, 26, 1910. 175 F. R. p. 799.)

PATENTS-LICENSE-IMPLIED LICENSE FROM SALE OF PARTS.

Purchasers from the owner of a patent of parts used in making the patented article held to have an implied license to make as many of the patented articles as were necessary to use up all of such parts.

HEIN et al. v. HARRIS.

(Circuit Court, S. D. New York, Jan. 26, 1910. 175 F. R. p. 875.)

COPYRIGHTS — INFRINGEMENT — MUSICAL Composition.

The right of the author of a musical composition which has been copyrighted to protection against infringement does not de-pend upon the musical merit of the piece, nor is it affected by the fact that he has borrowed in general from the style of his predecessors, unless he has so substantially copied from some other that to the ear of the average person the two melodies appear to be the same.

BERTELS v. TRETHAWAY.

(Circuit Court, M. D. Pennsylvania, Jan. 29, 1910. 175 F. R. p. 971.)

1. PATENTS - REISSUES-GROUND -DELAY -Scope.

To warrant a reissne of a patent, inadvertence, accident, or mistake must be shown, and there must be no unreasonable delay in applying for it. The claims may be narrowed or enlarged, but in either case they must be within the terms of the invention as it is specified and described in the original pateut; the invention, although differently stated, remaining the same.

2. PATENTS-REISSUE-ESTOPPEL BY DELAY. A delay of a year before applying for a reissue patent, the purpose of which was to reissue patent, the purpose of which was to avoid a limitation inadvertently inserted in a claim, did not invalidate the reissue as against an infringer, where he was notified of the infringement very shortly after the original patent was issued, and where the infringing device, although not within the claim of the patent as originally issued, strictly construed was within the invarious strictly construed, was within the invention as described therein and within the claims of the reissue, which were warranted by the original specification.

3. PATENTS-VALIDITY AND INFRINGEMENT CAN COVER FASTENER.

The Bertels patent, No. 802.677, and the reissue thereof, No. 12,629, for a can cover fastener, which consists of elongated buttons affixed centrally to the end of rivets or studs extending downward through the cover, the ends of which engage with the inturned edge or beaded rim of the can, the rivets having heads lying in countersinks in the cover by which the buttons are turned, and which are marked by a nick to indicate the position of the button, disclose patentable invention, and are infringed by a device differing only in that the heads of the rivets, instead of being nicked, are composed of two lugs which indicate the position of the button.

LANCASTER v. WITTE.

175 F. R. p. 976.

1. PATENTS-NOVELTY-MEANS OF UNITING

The making of an aunular ring or flange on the feed-section of a fountain pen, over which the month of the elastic rubber reservoir for holding the ink is stretched for the purpose of making the connection more secure, is only a usual and well-known method of making a tight connection between an elastic tube and au inelastic one, and does not disclose patentable novelty.

2. Patents — Infringement — Fountain

The Eberstein patent, No. 721,549, for a fountain pen, held not infringed.

MECHANICAL INVENTIONS AND DESIGNS

Patents for which have been procured through the Patent Soliciting Office of E. G. Siggers, Patent Lawyer, Washington, D. C.

George F. Garrity, Scranton, Pa. Railroad Spike.—This patent has for its object to provide a railroad spike in which the holding power of the same is increased, and also which will more effectively resist the tendency of the rails to spread. To accomplish this object the invention comprises a spike having its body substantially triangular in cross section, provided on its broadest face with a plurality of horizontal ribs or teeth, so shaped that intervening recesses are formed therebetween in which the wood of the cross tie is received and engaged.

Louie B. Wheeler, Asheville, N. C. Attachment for Drain Boards.—The object of this invention is to provide a sanitary attachment of non-absorbent or non-corroding material, adapted to be detachably secured to wooden or metallic drain boards used behind bars and soda water counters, thus enabling the same to be easily and quickly removed and cleaned. The device comprises an attachment of celluloid or like material, corresponding to the configuration of a drain board and provided on its lower end with a depending flange, which prevents the water entering between the sink and drain board, and also provided at its upper end with a screw clamp for detachably securing the protector and drain board together.

Edwin R. Crooker, Los Angeles, Cal. Clothes Pounder.—This invention provides a clothes pounder in the form of a cone with a simple, practical and durable soap receptacle formed in the center thereof, which will not obstruct the flow of water on the down-stroke, or decrease the suction of the clothes pounder on the upstroke. Another feature is the arrangement of the soap receptacle so that fabries, during the operation of the clothes pounder, will not become caught on the soap receptacle and impede the movements of the clothes pounder. A further provision is to arrange means for preventing the handle of the clothes pounder from sticking in the handle socket, should the handle become swollen through frequent immersions in the water.

James J. O'Donnell, Paducah, Ky. Three patents.—The first patent has for its object to provide a hollow metallic railroad tie, having apertures in its top surface and arranged at each end thereof and at both sides of the rails, the apertures being adapted to receive rail clamps, which are tightly held against the flanges of the rails by keys extending through openings in the sides of the rails and engaging lugs on the under portions of the clamps, thus providing secure fastening means for the rails and preventing the same from spreading.

The second patent provides a metallic guard rail clamp comprising a casting, adapted to receive the main and guard rails, and provided in its center with an upstanding head for separating the rails the required distance apart and engaging the base flanges of the rail, and also provided on each side thereof with slots which are adapted to receive wedges, which tend to force the rails against the said head and thus tightly clamp them in position. The wedges are provided with pivoted levers having teeth, which engage corresponding teeth on the casting and prevent the wedges from working loose.

The third patent has for its object to

provide an efficient, easily applied and readily removed nut-locking device for railway rail joints, and it comprises a plate inserted between the fish plate flange and the nut, and removably held in this position by any suitable means, the said plate so diminishing the distance between the nut and fish plate flange that it is impossible for the nut to rotate until the plate has been removed.

Henry W. Morrow, Lisbon, Ohio. Box Lid Holder.—This structure is intended to provide a detachable means for holding the lid of a box in open position, so that the contents thereof will always be displayed, and it is particularly adapted for use on boxes containing cigars. The device consists of a holder of wire looped at its upper end to form a slot for engaging the lid of the box when in open position, and looped at its lower end to provide clamping fingers for engaging one end of the box, one of said fingers being provided with teeth, which are embedded in the end of the box, thus preventing the fingers from slipping thereon.

Emmanuel Etienne & Joseph Dube, Sudbury, Canada. Method of Boring Horns.—The object of this invention is to enable the horns of deer, elk and various other animals to be bored longitudinally without splitting, chipping or otherwise injuring the horn, and to render such operation rapid without overheating the drill. It consists in feeding to the bottom of the hole, during the drilling operation, a mixture or solution, adapted to decompose or similarly affect the marrow of the horn immediately in front of the drill so as to permit the latter to proceed with its work.

Robert V. Jones, deceased, Canton, Ohio. Velocipede. Assignor of one-half interest to Samuel Zechar, same place.—This patent has for its object to provide a velocipede in the form of a figure of a horse or other animal which constitutes the body or framework of the vehicle, driving means being provided in the form of pedals, which are arranged on each side of the frame-work, said pedals being connected to a drive sprocket which is in turn geared to a sprocket wheel on the rear wheel by a flexible chain, thus providing a driving means for the vehicle.

Albert Altstadter, Huntington, Ind. Fire Escape.—The main object of the present invention is to provide a simple and efficient fire escape, in the form of a triangular wire frame, having a seat member and eyelets at the corners through which the supporting ropes slide, the device being adapted to be compactly stored in a room or compartment when not in use, and capable of being quickly arranged for use and of being easily controlled and operated for enabling a person to lower himself safely to the ground as slowly or rapidly as desired. The fire escape has simple controlling means, devoid of brakes or locking devices liable to get out of order, or requiring skill for their manipu-

Samuel W. Netherton, Roberts, Ill. Float Actuated Switch for Tanks.— The object of this invention is to provide a float switch operating means, designed for use in connection with tanks into which water is pumped by means of a gasoline engine, the said switch being automatically operated by electrical means to open the sparker circuit of the gasoline engine for stopping the operation of the same when the tank is full.

Elijah McCoy, Carthage, Mo. Two patents.—The principal design of the first invention is to provide a simple

and efficient steam canning apparatus divided into compartments, one adapted to scald fruit, vegetables, etc., in the preparation of the same for canning the goods, and another capable of also simultaneously cooking and steaming fruit, vegetables, etc., after the same have been placed in the cans. A particular feature of the invention is a series of U shaped pipes extending downwardly from the steaming compartment into the furnace, whereby steam may be rapidly generated.

The object of the second patent is to provide a cushioning support and protector for carriage top bows, in the form of U-shaped spring arms formed from one piece of metal and provided with integral fastening means for supporting it on an arm of the vehicle, whereby means are provided for automatically gripping and holding the carriage top when the same is lowered and while the vehicle is being driven over a rough road.

John A. Kleinfelder, Muscatine, Iowa. Steam Cooker.—In this patent the inventor's object is to provide a simple and efficient cooking utensil, adapted for cooking and steaming different articles of food, and capable of utilizing the direct heat from the boiling water and the effect of the steam or vapor arising therefrom, whereby such articles of food may be readily steamed and cooked. To effect this end the steam cooker is provided with an inwardly extending perforated flange, which will support and space the food-containing receptacle from both the bottom and sides of the cooker, thus permitting the steam to circulate entirely around the food receptacle.

Bryce P. Gibbs, Los Angeles, Cal. Paper Directing Attachment for Typewriters.—One of the primary objects of this patent is to provide a novel and simple attachment for typewriters, and one that can be applied by the operator to any well known type of machine, and will effectively maintain the paper in its rear position, and prevent the paper from falling forward into a position to obstruct the view of the writing. A further object is to provide means for properly directing and holding long sheets, such as record sheets, said means permitting the easy introduction into the machine of short sheets without disturbing the record sheet already in place.

Joseph L. Bukacek, Riverside, Ala. Cushioned Support.—This patent relates to a yieldable cushion of a simple and durable character, designed especially as a floor covering for use on hard floors to relieve the sensation of weariness incident to standing on a hard floor for a considerable length of time, and has for its object to provide a cushion constructed of an inflatable rubbertube wrapped into a plurality of convolutions, one surrounding the other and all united at their top surfaces by a rubber tread vulcanized thereto.

Joseph S. Bukacek and Joseph O. Hulicius, Riverside, Ala. Disk Cultivator.—This patent relates to disk cultivators, and has for its object to provide a cultivator, adapted to be drawn by a single horse, and capable of operating between the rows of plants, when the latter are too tall to admit of the soil being cultivated by a two horse cultivator. Another object is to provide a disk cultivator having spaced gangs of disks, capable of lateral and pivotal adjustment, to arrange the disks for throwing the soil either toward or from the center of the cultivator, and also to provide means for preventing young plants from being covered up by the soil, when the disks are set to throw the soil towards the plant.

George E. Toullerton, Houston, Texas. Automatic Railroad Switch.-The main object of this invention is to provide a simple and positive means for preventing rear end collisions, caused by or resulting through neglecting to throw the switch to the main line tracks after a train has passed into a siding. A further object is to provide a mechanism having operating means located at the siding rails in position to be actuated by the train, after moving in the siding, so that the switch will be automatically thrown to the main rails by the train moving into the siding to positively leave the main line clear for an approaching train.

Frederick D. Kaser, Silverton, Or. Wagon Brake.—The object of this invention is to provide an automatic brake for vehicles, having the applying means thereof attached to the collar or breeching of the draft animal, and adapted to be automatically applied by the draft animals when holding back to check the forward movement of the vehicle, while descending hills or other declivities, and capable of enabling a vehicle to be readily backed when desired without applying the brake.

Charles A. Thurmond, Perry, Ga. Cotton Planter.—The object of this patent is to provide an efficient cotton planter, equipped with means for digging an ordinary furrow and then smoothing the same out into a broad flat furrow, and also having a rotary drum co-operating with the seed hopper and provided with seed pockets in which are mounted plungers for expelling the seeds into the furrow so formed, placing of seeds being so regulated that they form transverse rows, so that the cotton plants may be thinned out with a plow, while cultivating the cotton, thereby eliminating the labor and expense incident to the thinning out of the cotton plants with the ordinary

George M. Hanger, Bridgewater, Va. Corn Thinner. Assignor of entire right to Daniel S. Thomas and James A. Fry, same place.—This invention has for its object to provide a hand corn thinner and weeder in the form of spring fingers, terminating in a handle at their upper ends and provided with blades at their lower ends; V-shaped bends facing each other between the handle and lower ends; a slide engaging the V-shaped bends and forcing the blades together to engage the corn, said slide being operated by a pivoted handle adjacent the permanent handle, thus permitting the weeder to be operated by one hand.

Ernest T. Kirkpatrick, Garfield, Wash. Saw Handle.—The principal object of the present invention is to improve the construction of saw handles, and to provide a simple and efficient device, in the form of a clamp, adapted to space a handle from the end of the blade of a cross cut saw, and connect the handle at an intermediate point with the saw blade to provide upper and lower grip portions to enable the saw to be advantageously employed for cutting either up or down.

John C. Kistler, Clinton, Missouri. Clover Seed Harvester. — The inventor's aim in the present invention is to improve the construction of clover seed harvesters, more especially the means for separating the values from the refuse after the clover heads have been picked. The harvester is adapted after picking the heads to masticate or grind the same, first separating the heads, straw, and other course matter from the seeds and chaff, and then removing the chaff from the seeds by delivering the latter to the hulling mechanism.



Advertisements inserted in this column for 10 cents a line (about 7 words) each insertion. Every new subscriber sending \$1.00 to The Inventive Age will be entitled to the Age one year and to five lines three times free. Additional lines or insertions at regular rates.

FOR SALE — Foreign patents for The Wells Butter Worker, in Canada, Mexico, Belgium, France and England, Address, Miss Ella Wells, R. F. D. No. 5. Shelbyville, Ky. mar

For Sale - Patent No. 547,581. Windrow Baling Press. A great labor and hay saver. Simple yet powerful. Address, Jacob Barens, Altus, Ark.

F or Sale or royalty—U. S. Patent No. 968,769. An Improved Electric Center Grinding Machine. This machine is superior to all other machines on the market. For particulars write, William A. Ireland, No. 47 Johnston St., Newburg, N. Y.

FOR SALE for cash, or part cash and royalty—Patent No. 960,540, dated June 7, 1910.

Pruning Implement. An entirely new and original idea. For particulars apply to I. E. Guest, 2708 Champa St., Denver, Colo.

FOR SALE—Patent No. 966.298, dated Aug. 2, 1910. Sink Cover. U. S. and Canadian. For particulars address, Edith M. Beland, Box No. 326, Lebanon. N. H.

FOR SALE—U. S. Patent No. 961,794, and Canadian Patent No. No. 124,625. Wire Cutter. Especially for cutting galvanized wire rope. Will sell outright or on a royalty basis. No reasonable offer refused. Address, William Peters, Congress, Arizona.

FOR SALE-U. S. Patents No. 959,283 and No. 973,456; Canadian patents No. 119,978 and 127,287, envelope sealing and stamping machine. Best invention out for this work. Will selloutright, If interested and willing to pay a good price for a good thing, address, E. J. Abbott, Mission City, B. C., Canada.

FOR SALE-Patented wire guide for paper-making machines, Patent No. 906,877. Address, 1050 East Eighth St., Erie, Pa. jan

FOR SALE-U. S. Patent No. 961,290, dated June 14, 1910. Replanting attachment for cultivators. A boon to all corn growers. Will sell outright. If interested, address, William Faust, Higgins, Texas. jan

FOR SALE—Patent No. 960,942, dated June 7. 1910. Automatic Pump. Will sell outright at a reasonable price. Address, Samuel J. Jackson, Pleasanton, Alameda County, Cal. jan

For Sale-Patent No. 962,161, dated June 21, 1910, Gas burner for furnaces. Uses one-fourth less gas than other burners; will not flash out in your face when furnace door is opened. Will sell outright or on royalty. Address, Thomas Mowcomber, Elkland, Pa. jan

FOR SALE—Patent No. 963,417, on royalty or outright. Device for Hanging Storm Windows and Screens. The only invention of its kind. Can be manufactured at small cost. Address, Edward C. Brown, Bismarck, North Dakota.

FOR SALE — U. S. Patent No. 958,672. and Canadian Patent 126,790, on Self-Waiting Tables. Address, Karl J. Olson, P. O. B. 392, Gladstone, Michigan.

For Sale-Patent No. 957,561, dated May 10, 1910. Quilting Frame. Something every family needs. The handlest frame ever made. Will give a good commission if sold soon. If interested write me. Fred Jakob, Bartley, Nebr.

FOR SALE — U. S. Patent No. 947,865, and Canadian Patent No. 127,371, on a Door Catch. Either outright or on royalty. Address. William D. Taubert, care Alfred Nuffer, Hills, Minn.

POR SALE—Patent No. 959,481, dated May 31, 1910. Automatic Rivet on Scissors. Cuts clean, saves worry and time for women. Part cash and royalty. Address, John W. Dowden, Box 122, Reeves, La.

For Sale—Patent No, 931,237. Permutation, Keyless Lock. May be used on trunks or suit cases; cannot be picked; no danger of losing key; profitable invention if properly handled. No reasonable offer refused. Address, Wm. Erhardt, 112 Munson Street, Astoria, Long Island, New York.

FOR SALE-U. S. Patent 952,792. dated March 22, 1910. Combination straight edge shingling and clapboard gage. Address, C. H. Webster, Thomaston, Maine.

FOR SALE—Patent No. 958.461, for quick detachable wagon skates. Sets made to sell for ten dollars with big profits. Absolute necessity. Make a sleigh of any wagon in ten minutes. For particulars write, Max Aubertel, Cornwallon-Hudson, N. Y.

ROR SALE-U. S. Patent No. 957,308, issued May 10, 1910, Wagon-jack. Can be manufactured at small cost. I wish to sell outright for cash. For particulars write, M. G. Colby, Main St. Sta., Franklin, N. H. jan

FOR SALE—Patent No. 958,915, dated May 24. 1910. Hopper closet grappling hook for plumbers' use. For removing stoppage to hopper closets, sewer traps, etc. Easily manufactured; quick sales. Address, E. C. Fraw, Jefferson, Ohio.

For Sale-U. S. and Canadian patents Nos, 948,849 and 126,016, respectively, dated Feb. 8, 1910 and May 31, 1910. A practical jamb adjuster. Just the thing for contractors and carpenters. Outright sale or on royalty. Greatest time saver. Address, Christian Ehr, Portage, Wisconsin.

FOR SALE—Patent No. 910,785, dated Jan. 26, 1909. The ultimate universal detachable sanitary soap dish. Holds soap firmly when throwing water out. A boon to all homes, camping and outing parties. Can be manufactured at small cost. Apply to T. C. Colton, Griswold, Man., Canada, jan

For Sale-U. S. Patent No. 958,546, issued May 10, 1910. Railway Spike. Impossible to work loose of itself. Impossible for rails to spread. Any reasonable offer considered. Address, R. A. Rossmeisl, Whitingham, Vermont,

FOR SALE or exchange for real estate—U. S. Patent No. 950,630, dated March 1, 1910; Canadian Patent June 6, 1910. Trolley Poles, Can't come off wire. Very good invention. For particulars and price address, Henry Brod, St. Charles, Mo.

FOR SALE—Patent No. 959,309. Car Fender. Can be manufactured cheaply. Will sell outright or on a royalty basis. Cheap for quick sale. Address, A. H. Carter, 2235 Cutter Ave., Canton, Ohio. jan

For Sale — Patent No. 956,542, dated May 3. 1910. Peterson's Automatic Damper Control, Simple, durable, reliable and practical. Something needed in every home, store, factory and public building. Will sell outright, or will consider a reasonable royalty proposition. Address, Hjalmar Peterson, Falun, Wisconsin.

For Sale — U. S. Patent No. 939.727 and Canadian Patent No. 155.875. Snap Hook. Automatic adjustment and easy operation; capable of various uses and is self-locking. Will sell outright, or for any state or county. Address, Matti Maki, Grelland. North Dakota.

FOR SALE or on royalty—U. S. Patent No. 961,174, dated June 14, 1910, Micro-adjustable foot-arch support. Worn in insole. For weakened or flat feet. Wearer can raise or lower by turning a screw. Supports either inner or outer arch of foot as comfort suggests. Result of eight years professional study and experimentation. Splendid article for growing mail order business. A. M. Smith, D. O., Hagerstown, Md. ian

WANTED.

Wanted-Read the latest and best books of all kinds at low cost through our renting system. Address, C.C. Lutes, Noxen, Pa. jan

W ANTED—A company to manufacture a bag holder made of sheet iron. U. S. Patent No. 968,349, dated August 23, 1910. Will have patent for Canada in a short time. Address, Louis Hanson, Cottonwood, Idaho. jan

WANTED—Twenty per cent interest in one of the best inventions for financial assistance; \$250 to be used for protecting invention, making models, etc. For further particulars address, W. M. Ramershofen, 1410 Hyde Street, San Francisco, Cal. jan

WANTED—To sell interest in patent office and library specialty recently placed on the market. Purchasers duplicating orders both in U.S. and foreign countries. For full particulars address. Oscar Dreher, No. 213 Wallace St., Stroudsburg, Pa. jan

WANTED—Help to organize and promote a company to establish small mills in timber sections to manufacture material for my patented Veneer Barrels. Have an export and domestic trade using 800,000 barrels annually. Address, George H. Brown, 295 Duke St. Norfolk, Va.

Electrical Review and Western Electrician

Published weekly from the center of the industry, this publication is in the best possible geographical position to gather and present the most important and interesting news of the entire electrical industry.

SUBSCRIPTION PRICE

U. S. \$3.00 per year, Canada \$4,00 per year, Foreign Countries \$6.00 per year. Sample Copy Free

It is seen and read by practically every buyer of electrical material in this country and abroad. Advertising rates on application.

ELECTRICAL REVIEW PUBLISHING CO., 507 Marquette Bldg., CHICAGO.

A NEW BOOK FOR INVENTORS Patents and How to Make Money out of Them,

By W. B. Hutchinson.

This is the only book published, giving a detailed and full account, from the author's actual experience, of just what steps are necessary from the time the invention is conceived, to the time it is sold, with a clear and concise resume of the law and practice, legally and commercially, of trade-marks and copyrights. It also tells accurately How and What to invent. How to sell Inventions, Place them on the Market, Interest Capital in them, and to successfully Promote a Stock Company. It also contains an index of forms worth double the price of the book to any one interested.

ELEGANTLY CLOTH BOUND.

GOLD STAMPED. \$1.00 Postpaid.

Sent with one subscription to Agr for \$1.50.

Or will sell separately.

Address- The Inventive Age Pub. Co.,
918 F St., N. W. WASHINGTON, D. C.

DESIGNERS

DESIGNERS

DESIGNERS

THE

NATIONAL

ENGRAVING

COMPANY.

INCORPORATED

FINE COPPERS

HALF TONNES

ZINC ETCHING.

SOG-SOB 14TM COR PA AVE.

WASHINGTON, D.C.

PHONE 1679 MAIN

A VALUABLE OFFER TO INVENTORS.

A Complete Outfit of Printed Matter for \$20.

- 1. A zinc etching of your invention for use in printing letterheads, envelopes, circulars, etc.
 - 2. One thousand printed circulars.
- 3. Five hundred envelopes with your name and address printed in the corner.
- 4. Five hundred letterheads with a cut of your invention, and your name and address neatly printed thereon.
 - 5. A list of manufacturers in the special line of your invention.
- 6. A form letter to be followed in conducting your correspondence with manufacturers and others.
- 7. Four dozen deeds useful in selling state, county, town or shoprights. Address:—

INVENTIVE AGE PUBLISHING CO. Dept. O. WASHINGTON, D. C.

ATTENTION INVENTORS!

LISTS OF MANUFACTURERS FURNISHED.

We have increased our facilities for furnishing lists of manufacturers, and now cover every line of industry. The names are obtained from well known directories.

Our charge'for each list is one dollar.

In ordering, please state specifically the class of manufacturers desired. Address: Inventive Age Pub. Co., Dept. M. 918 F. St., Washington, D. C.

Every subscriber when sending \$1.00 is entitled to a free advertisement, not exceeding five lines, of any patent in which he may be interested. The ad. will be inserted three times,

THE INVENTIVE AGE PUBLISHING CO., Washington, D. C.	
I herewith enclose \$1.00 for one year's subscription to	
"THE INVENTIVE AGE."	
I also enclose ad. for insertion in the (Patents for Sale*) (Want*) column of your paper.	
NAME	
P. O	
State	

*Please indicate in which column you want the ad. inserted.

N. B.—Remit in the way most convenient.



Established 1889.

Published monthly by

THE INVENTIVE AGE PUBLISHING CO.,

National Union Building, 018 F Street, N. W. Washington, D. C.

THE INVENTIVE AGE is sent, postage prepaid, to any address in the United States, Canada, Mexico, Hawaii, and Porto Rico, for One Dollar a year; to any other country, postage prepaid, One Dollar and Twenty-Five Cents.

Correspondence with inventors, mechanics, patentees, and manufacturers, is invited. The columns of this journal are open for the discussion of such subjects as are of general interest to its readers.

Technical matter is particularly desired. We want practical information from practical men.
The Inventive AGE is independent.

Special facilities for furnishing cuts of any patented device together with descriptive article. Business specials 10 cents a line each insertion: 7 words to the line. No advertisement less than 25

Address all communications to

THE INVENTIVE AGE PUBLISHING COMPANY,

WASHINGTON. D. C.

Entered at the Post-office as 2nd class matter.

WASHINGTON, D. C., JANUARY 1, 1911.

A Patentee's Dilemma.

Our attention was recently called to a letter from a patentee to a patent lawyer in this city, stating his experience in dealing with a manufacturing company. The situation, although unfortunately not rare. is one with which the inventing public is quite unfamiliar, and we deem it of sufficient importance to give our readers the details. The writer, referring to an article invented by him, says: "It is being manufactured by a Chicago firm, but I am getting nothing for it. They are making it on royalty. The papers were drawn up wrongly. I should have had you attend to the matter for me. It is my own mistake."

It appears that the Chicago company approached the inventor of this particular article with a proposition to manufacture on royalty—a proposition of the sort that always appeals to inventors. The owner was to receive a royalty of a few cents on each article made and sold. The plan looked good to the inventor, and he accepted it. The attorney for the Chicago concern drew up the papers, and of course worded them so as to protect the interests of his clients. It was for that he was employed. From the standpoint of the inventor, there was no objection to the preparation of the papers by this attorney; they had to be prepared by some one; but his fatal error lay in the fact that he did not have a legal representative of his own examine them before he affixed his signature. As a result, he now finds that although he holds a paper promising to pay royalty on each article manufactured, the contract is so drawn that the firm manufactures constantly, and he gets no money. Through a defect in the wording of the papers, he is unable to stop the manufacture of the goods, or to obtain redress. If the patentee had paid from ten to twenty-five dollars to an attorney to look over the license agreement, he would now be protected.

Very few inventors understand what is essential in a license contract. The proposition to manufacture his device

on royalty is attractive to him. This is often the most profitable means of realizing on an invention. We know of cases where inventors are receiving thousands of dollars a year in royalties on a single tool. A man who invented a plow point arranged with a company to have it manufactured, and to receive one cent for each point made and sold. This seems a modest enough return; but the firm is making fifteen hundred of these points a day, which brings the owner fifteen dollars for the same period, or, as can be estimated, a handsome income for the year.

A proper royalty contract should always include a provision for a cash payment at the time of signing the contract. This may be in the shape of an advance payment, to be deducted from the other royalties as they become due. This advance payment should always be exacted when the patentee is dealing with an unknown concern, or with one of doubtful standing. A firm that means business will be entirely willing to pay an advance of from \$500 to \$1000 on the signing of an agreement, with the understanding that no further payment is to be made until the royalties reach this amount. The only valid reason that can be urged against this arrangement is that the manufacturer may think he should not be alone in assuming the risk of placing an unknown article on the market. The inventor, he argues, should share the chances with him. Not knowing whether the device will be a commercial success, he hesitates to add to the expense of manufacturing, advertising, etc., the extra cost of advance royalty. But in spite of this, we feel that the inventor should demand that this payment be made. It will cause the manufacturer to make extraordinary efforts to introduce the goods, if he wants to get his money back. If the manufacturer has been subjected to no outlay, and he finds that the cost of placing the article on the market promises to be more than he had expected, he might be tempted to lay it aside. In the interest of the inventor, therefore, we think that the payment of advance royalty should always be insisted on in the preparation of the royalty papers.

Another point that should be remembered is the inclusion of a provision to terminate the contract if all its requirements have not been complied with. We have often seen contracts where a man had leased his patent to a manufacturer for its entire term, but had made no provision for the termination of the contract if the manufacturer did not fulfill his pledges. Thus a company acquired an exclusive license to manufacture during the entire period of patent protection, and being under no obligation to the patentee, or bound to him in any way, they laid the matter aside, took no steps to manufacture, and the patentee was powerless to compel them to do so. We have known of cases where manufacturers have sought license agreements with patentees for the express purpose of getting the device out of the way after the contract had been signed. Often

an invention, if placed on the market, would supplant a device now being sold, and the owner of the latter desires to get control of the improvement, on a royalty basis, and then bury it from the light of day. The patentee gets nothing, the manufacturer loses nothing, and the patent is tied up for seventeen years. If the agreement had stated that in case of failure to comply with its terms, the patentee could rescind it, upon thirty days' notice, he could then regain possession of his patent, and make arrangements with some other manufacturer who would take a bona fide interest in the article.

Another matter that should not be overlooked in the contract, is that a certain number of articles should be required to be made annually. This is a point of great importance, as in its absence the manufacturer could shelve the device, and the owner again be without recourse. But with such a requirement, the patentee can always know what the amount of his royalties should be. Of course this will not prevent the manufacture of a much larger number of articles. It is the minimum that should be specified in the agreement, and the manufacturer should be required to pay royalty on that number. Another point is that the royalty payments should be made at stated intervals, monthly, quarterly, semi-annually or annually, as desired. It is customary to state in the agreement that if the payments are not made within thirty days the contract becomes null, and the patentee may thereafter hold the manufacturer liable for infringement of his patent.

All articles placed on the market should also be stamped "patented," with the date of the patent, and this should also be nominated in the bond. Unless this is done, the patentee will find it difficult to protect himself from infringement. It may cost a little more to so stamp the goods, but it should be done nevertheless. If an article is not stamped as described, the inventor cannot hold an infringer for damages.

A very important matter, and one that is often overlooked, is the re. quirement that the manufacturer should bear the expense of any patent litigation that may arise. Nearly every successful invention is infringed. It is only meritorious things that are paid the tribute of imitation. Very often, as soon as a company starts to manufacture, it finds itself confronted by an infringement. Under the ordinary license agreement, where there is no special provision made on the subject, the patentee is obliged to assume the costs of this legal process. These costs frequently amount to several thousand dollars, and the patentee is unable to meet them. It may seem equitable in some cases to provide that both parties should share in this expense. Sometimes the manufacturer agrees to bear the entire charges, on condition that the management of the suit be left entirely to him. On the other hand, patentees sometimes prefer to control the legal proceedings themselves, and in this case the agreement may provide that they shall bear the expenses. Where the

manufacture of the device has passed beyond the experimental stage and the article is recognized as a success, it is equally to the interest of both parties to defend the title.

Still another provision to be included, is that the license should be personal to the manufacturer. If he should go into bankruptcy, or sell out, or retire from business, the patent should revert to the patentee. In this way the license agreement does not become a part of the assets of the manufacturer, and does not pass into the hands of the trustee in bankruptcy, or to his successor in business.

There are other requirements that should be made to protect the interests of the inventor, in drawing up contracts, but those above stated are the most essential. It is important, as may be inferred from from what we have said, to consult a patent lawyer before signing, and by a patent lawyer we mean one of proved experience and training, who knows the pitfalls in the path of the patentee, and is shrewd enough to guard his client against them. Under no circumstances should a patentee sign a royalty agreement drawn up by the attorney for the manufacturer, without the advice of his own counsel.

Something New in Patent Selling.

A new scheme of some patent sale agents has been brought to our notice, and though our readers have probably already heard of it, they may not have knowledge of the true meaning of the plan. It appears that there is a concern in Milwaukee, Wisc., which writes to patentees, on the issue of their patents, inquiring if the latter are for sale, and the price. Many inventors reply, naming certain sums that they would take for their devices. A second letter is then sent by the firm to each correspondent, saying that the amount specified is satisfactory, but that before further steps are taken for the purchase, it will be necessary to have an engineer's report as to the value of the patent, or some details about the manufacture. The letter gives the names of two concerns in Washington, as parties competent to prepare such a report. Investigation shows that the Milwaukee firm occupies a small room in a big building, and apparently has no tangible assets apart from a few office desks. The Washington concerns are in much the same situation. The scheme, which is sufficiently transparent to those with any knowledge of patent affairs, is to have the patentee pay the Washington people a fee for submitting what they term an engineer's report, and this money is divided with the Milwaukee concern. The report states that the patent is valueless, and the Milwaukee people write to the patentee that in view of this, they do not wish to buy it. As a matter of fact, the Milwaukee firm is in no position to buy a patent, and would not buy, no matter how the report might read. The understanding is, however, that the report shall be always unfavorable, so that they can easily evade further steps in the matter of pur-

chase. The uninitiated would never imagine that there was any connection between the firms. Further investigation would doubtless show that there is one man in each place, operating in the name of a company, in order to conceal his real identity. It does not cost him much to send out a few thousand circulars, and he reaps a good harvest in the returns. Pity tis, tis true, that the troubles of the inventor really begin after he has obtained his patent, although he thinks that they are then ended.

Radiators as Room Coolers.

In one of Chicago's giant hotels a device has recently been installed which will liherate steam into the radiators during the winter and cold brine or liquid air in summer, thus heating the rooms during the cold months and cooling them during the hot. The apparatus is so constructed that for every variation in the degree oftemperature, acorresponding change is made in the quantity of cold or hot material introduced into the radiators, thus maintaining an even temperature throughout the year. Many advantages, besides the comfort afforded to occupants of rooms, will be derived from this arrangement, one of which will be the diminution in the number of colds suffered by the lodgers, throat trouble of this nature being believed to be due mainly to sudden changes in room temperature.

Looking at the Back of Eyes.

Since the day when the eye mirror was invented by Helmholtz, it has become possible to examine the conditions of the eyes of patients and to ascertain any morbid alteration of them. In using this ingenious device, however, the light is thrown through the pupils and upon the background. and is reflected from the latter so as to reach the observer's eyes. This method is therefore specially adapted to show any color shades in the background. It occured to a Berlin oculist that in many cases it would be preferable to illuminate the eye from within by placing an electric lamp in the mouth of the patient, thus lighting the retina from the back. The background of the eye is thus placed between the lamp and the observer, and while differences in color do not appear so strikingly as in connection with the eye mirror, most pathological alterations are recognized with even more distinctness, owing to the attendant difference in transparencies. The lamp is cooled by a continuous stream of water flowing within it. The patient under treatment is masked, to prevent confusing light reflections from interfering with the oculist's study of the eye.

Liquid Compass.

The latest form of mariner's compass is a return to the idea embodied in the most ancient design-the crude liquid compass used by the early Chinese. The great objection to the various compasses of this classheretofore employed has been the impossibility of combining steadiness in a sea way with quick action in smooth water, and the hindrance to perfect ployment of long magnets on the card, necessary to give sufficient directive force. The defects have been overcome in the Dobbie compass by making the card of much smaller diameter than the bowl, permitting the use of magnets having the requisite directive force but of such dimensions and power as to allow perfect adjustment. Thus by using a six inch card in a nine inch bowl and at the same time increasing the usual space between the body of the float and the bottom of the howl. a perfectly steady compass is attained. It is a well established fact that the disturbance of the liquid in any vessel of this construction diminishes towards the center, and it has also been found, from trial trips of steamers, that in shallow water the solid bottom interferes with the free motion of a ship sailing above. The card in the new compass is withdrawn, by the means described, from the area of greatest disturbance. The card is marked with cardinal points and degrees only, and because of the removal of the darkening effect of the points and half points, the card is the more easily read.

Automatic Track Inspector.

With the increase in loads and speeds in railway service, it is becoming more and more important to maintain the track in condition for the smooth and safe running of trains. A machine simple and inexpensive enough to be furnished to division officers, and yet reliable enoughto give practical useful results, has been recently invented, and is described in the Technical World. It is an automatic recorder of track conditions, and can be used as part of the roadmaster's equipment. It has been tried on steam and electric roads with favorable results.

The machine resembles a three-wheel track velocipede, and in use it is coupled behind a hand car or inspection car. It weighs about 250 pounds, and can be run at a speed of 12 miles an hour. When in operation it draws, on a continuous roll of paper, a diagram showing the condition of the surface of the track, and if the rails are level on tangents and have the proper superelevation on curves. It also records low joints, showing the amount of depression. and all variations from the proper gauge. On the machine is a wheel. three feet in circumference, which is connected to a cyclometer and is used in taking measurements. The lineal scale of the diagram is 200 feet to the inch, or 26.41 feet to the mile. The natural scale is used for the gauge and half the natural scale for the elevation.

The driving gear moves the paper over the roll at the rate of 26.41 inches per mile of track. A pendulum suspended from the vertical frame moves to right or left as the wheel on either side goes higher than the other, thus moving one stylus to right or left. The paper has a heavy ruled line upon which the stylus follows when the track is perfectly level, and marks to the right or left of this line show how much the track is out of level or what The paper is ruled with lines onequarter inch apart.

A record of the gauge is obtained by using two pieces of tubing for an axle, one piece being large enough to admit the other. Inside the large tube is placed a graduated spring which keeps the wheel flanges tight against the rails. The rod attached to the loose end of the axle carries the stylus, which comes in contact with the paper and marks every change. A heavy ruled line on the paper shows where the stylus should be at standard gauge. The distance that the diagram drawn by the stylus varies from the line shows how much too wide or narrow the gauge may be at any given point.

Chloreforming Plants.

It has been said with much truth that civilization precedes all forms of gardening, and this is especially the case in respect to ornamental or decorative gardening, as compared with the culture of plants for economic purposes. Decorative gardening is one of the last hobbies to be taken up in a newly civilized country, but after this stage has been reached the hobby continues to be progressive as long as the civilization itself advances. Thus it is that in the twentieth century we are no longer content to cultivate plants in their natural season of growth and gather the flowers in summertime, but we attempt their cultivation in every season of the year, and expect our supplies of roses to be as certain in January as in June. This is made possible through the employment of systems of artificial heating of conservatories, and the consequent "forcing" of the plants. But there is a limit beyond which such forcing cannot be pushed, owing to the fact that plants insist on a certain amount of rest after the completion of growth. Many bulbous plants, such as lilies, and also lilacs and azaleas. were impossible flowers in the late autumn. It therefore occurred to market growers that instead of forcing plants of the presentseason's growth. it might be feasible to retard those of the previous year. It was found that lily bulbs, etc., might be lifted early in the spring before commencing growth, and placed in cold storage, and thus retarded until the date when it was desired for them to flower. This method is now practised in all gardening cummunities, and its commercial value is beyond estimation. It must be pointed out, however, that toward the end of the autumn the plants that have been in cold storage so long begin to loose their vital power, for the sleep cannot be indefinitely prolonged with impunity, and by the time the forcing of the succeeding season's products can be undertaken with success, the old retarded specimens

The next discovery in regard to the forcing of plants was made in Denmark, by a botanist who, after in winter?

have lost their value altogether.

adjustment, resulting from the emiss the amount of elevation on curves. making a prolonged study of plants decided that their period of !nactlyity of sleep might be divided into there stages, as follows: 1. The per commediately following the fam of the leafor a stage in which the lit's going to sleep: 2 / A similar milt of time during which rest is a same. and (3) the period in the spring the sleeping stage having passon the tree continues to remain continue. because the weather is an suitable the growth.

> It was thought that it might possible to burry the plants that ga the first two stages of restinte the third, and it was obvious that if this could be done, they would at once he in a suitable condition for introduction to the forcing house. It was found by repeated experiment that in plants. as in animals, the effect of ether and chloroform is to cause every indication of sleep, and during the past few years the system of treating plants in this way to hasten them through the resting periods has been adopted commercially with extraordinary success.

A lilac bush may be lifted from the ground at the end of the summer while the leaves are still on it and kept for several hours under the influence of ether. By this means such an effect is produced on the tissues as it would have taken nature months to accomplish. It is now easily possible to flower lilacs twice in the same year, once in the open in June and again in November by etherizing the plant at the end of August, and subsequently forcing it in the hothouse.

Plants to be etherized are brought first into a dry condition at top and root, and then placed in an air tight structure. The door is sealed and the ether applied through a small hole in the roof into a vessel in the house. and the fumes being beavier than the atmosphere, hang about near the floor. where the plants are arranged. The ether has the effect of drying up the moisture in the tissues. and it is thought that in the natural rest of plants there is a gradual drying process at work which, for want of better knowledge, the cultivator describes as the ripening of the tissues.

But the very latest aid afforded by science to this industry is the use of acetylene gas in forcing plants. For years experiments have been made in cultivating flowers, etc., under electric light, and it has been proved that it promotes assimilation and hastens maturity. It was discovered. however, that the chemical ultra-violet rays were injurious to the plants, and a Cornell professor turned his attention to the employment of acetylene. He has decided that this latter more nearly approximates sunlight in its make up than any other artificial illuminant used. Strawberries have been made to bear 16 days earlier as a result of acetylene added to sunlight. Geraniums blossom three weeks ahead of the normal time, and radishes increase in weight.

How many persons when they are purchasing lilies, roses, tulips. hyacinths and viburnum for their Christmas decorations, have any idea of the artifices it is necessary to resort to in order to make the garden bloom A

CLASSIFIED list of Patents issued during the month appears in each issue of the Inventive Age. This keeps inventors and manufacturers posted in the art in which they are most interested.—We will send, postpaid, to any address, printed copies of any U. S. patent, with specifications and drawings, upon receipt of 10 cents per copy.—Please give correct data in ordering.—Address.

THE INVENTIVE AGE PUBLISHING CO., 918 F St., N. W., Washington, D. C.

LIST OF PATENTS

--:0:--

Issued September 13, 1910.

MECHANICAL PATENTS. (Continued from December Number.) Carriers, Elevated-track system for overhead. ... J. C. Fitzgerald Carriers, Stop and rebounder for clevated. J. C. Fitzgerald Carron. ... F. W. Handschy Cartridge-filler ... R. French Caster ... R. French Casters. G. C. Nickerson Castings, Forming ... C. B. Phillips Chair, Open-link ... G. L. Lamb Chair or stool attachment ... F. T. Nash Check or draft protector ... F. O. Kueera Churn ... W. C. Kinser Churn ... W. C. Irvine Chute, Stock ... F. H. Mills Cigar-bunches, Making ... J. E. Smith Cigar-bunches, Making ... J. E. Smith Cigarette-machine ... M. Pollak Cigarette-machine, Portable G. H. Carter Cigarette-tipping machine ... A. Boucber Circuit-breaker ... H. L. Van Valkenburg Circuit-conductors, Binding device for ... T. E. Murray Circuit-switch ... L. Wilson Carriers, Elevated-track system for over-Circuit-conductors, Binding device for....
T. E. Murray
Circuit-switch. L. Wilson
Cistern-cleaner, Automatic L. Thiem
Clamp. G. E. Browne
Cleaning-tool. I. H. Speneer
Cleck. E. E. Dungan Coal-hod. J. L. Hair
Cock, Gage. J. R. Brown Coal-hod. J. L. Hair
Cock, Gage. J. R. Brown
Cock, Stop. J. E. Van Nostran
Coin-controlled apparatus. J. M. Spendler
Coin-controlled slide. R. P. Hammond
Coin-holder. J. Nelson
Collan and cuff fastener, Detachable. ...
M. J. Dahill, Jr.
Collar, Horse. E. Brown
Collet. A. R. Simmerly
Commutator bar and lead. C. E. Lord
Commutator bar and lead. C. E. Lord
Commutator construction. F. Jeffrey
Compounds of the active substance of suprarenal glands and said compopunds.
Making. B. Reuter
Concentrating-table. A. R. Wilfley
Concrete-mixing machine. L. W. Cargill
Concrete railway-tic, Reinforced. ...
H. D. and W. B. Emmons
Concrete-shingle-molding machine. ...
F. Latulip
Cooker, Steam. O. E. Allen R. Kindrick Drill. C. Seals
Drills. Hoe attachment for. T. J. Boozer
Drinking-fountain, Sanitary. J. Goebel
Dye, Anthracene vat. I. Thomaschewski Orinking-fountain, Sanitary. J. Goebel
Dye, Anthracene vat. I. Thomaschewski
Egg-marking device. S. A. Merkley
Egg-packing device. R. C. Holmes
Egg-stamp. D. Ortiz
Egg-tester. W. Rogers
Electric cut-cut. T. E. Murray
Electric heater. Portable. F. L. Dyer
Electric machine brush. Dynamo. E. T. Mug
Electric machine, Dynamo. E. Mattman
Electric machine, Dynamo. E. Arnold et al
Electric switch. G. S. Williamson
Electrical protective apparatus.

J. A. Birsfield
Electrical sliding contacts. Coaling device
for. B. von Ugrimoff
Electrolytic apparatus. W. Thum
Electromagnetic device. W. S. Burnett

Exhibiting and advertising apparatus...

G. A. Gee
Explosive-engine. L. A. Frayer et al
Extensible table. S. Mautner
Extracting apparatus. C. H. F. Lambke
Eyeglass-mounting. L. R. Adt
Eyeglasses. J. C. Wells
Fair-leader. A. Isaac
Fare-box. E. S. Bucknam et al
Fastener for closures. T. F. Foley
Fastener-inserting meehanism.

H. A. Ballard
Faucet. J. Morehead
Feed-bag. E. R. Dempsey
Feed-bag. C. A. Boyd
Fence-stretcher P. A. Reid
Fibers from the pulp and extraneous matter of plants and trees, Machine for separating.

E. Behrendt
Filling buckets, &c., from hoppers, Means
for. A. Smith rilling buekets, &c., from hoppers, Means for. A. Smith Firearm. M. C. Lisle Fish-trap. Floating. N. L. Moen Fishing rod and reel, Combined. O. M. Scott Flash-light apparatus. D. C. Shoberg Flat-iron heater. S. G. Buskard Floor leveling and surfaeing machine. G. F. Hall Flower, Artificial. E. Antonuccl Fluid-actuated motor. W. Snee Fluid-pressure system. C. E. Lord Fluid pulsating apparatus. C. C. Glidden Flushing apparatus, Closet. W. S. Graham Fly-frightcner. A. W. Grove Fly-screen. H. L. Franke Food products, Apparatus for preparing. H. L. Holt Footwear. A. Muller Fringes, Apparatus for the production of ... Fringes, Apparatus for the production of. E. Huebler
Fruit-treating apparatus, Dried...
I. S. Merrell Furnace-door. G. O'Neill Furnaces, Automatic fuel-feed mechanism for 2 pats. G. Dinkel Furniture, Combination. F. Rogers Furniture, Elastic support for upholstered A. W. Hornig
Glass, Means for drawing sheet.

I. W. Colburn
Grader. L. N. Morscher
Grain-binder knotter. W. Utt. Jr.
Grasshopper-catcher. M. V. Whiting
Grinding-barrel. D. C. Demarest
Grinding device. E. B. Pike et al
Grinding machine, Awl. W. B. Morse
Geard. D. D. Ogilvie
Hair-dressing comb. C. H. Royalty
Hammock, Knockdown couch. I. E. Palmer
Hannocks, Canopy attachment for.

C. S. Huffman
Handkerchiefs and like articles, Machine
for folding. R. Cunningham
Handle-making machine. M. Kamenstein
Harness attachment. E. Cowan
Harness, Draft. T. W. Schlater
Harpooning device. S. Coleman
Harvester-cutter. B. F. Weathern Glass, Means for drawing sheet

Hat-planking machine, Felt....A. Turner Hatch-fastener for vessels...M. Mulholland Hay-fork attachment.....T. S. Barbour Heat control, Automatic electric...... Hose-support. J. E. Austin
Humidifier. J. W. Fries
Hydrant-cap. W. S. Reed
Hydraulic-power plant. J. T. Dougine
Hydraulic-power system. T. A. Macdonald
Hydroextractor. C. Miller
Ice-cream freezer. C. K. Greaves Hydroextractor. C. Miller
Ice-cream freezer C. K. Greaves
Incubator G. M. Curtis
Incubator-heater M. M. Jobnson
Indicator C. Emsheimer
Ink. W. G. Fuerth
Inking mechanism J. S. Duncan
Insect-catcher F. M. Carter
Insecticide and disinfectant J. C. Dooley
Insulator J. A. Meurling
Internal-combustion engine S. Lake
Internal-combustion engine L. A. Martba
Ironing-cabinet C. D. Booton
Ironing-table G. Foster
Irrigation system M. P. McCulloch
Jar-holder B. F. Bain
Journal and bearing A. J. Fisher
Journal-box L. G. Woods
Journal-box L. G. Woods
Journal-box L. B. S. J. Strid
Journal-box L. Lobricating G. P. Simmons
Journal-box M. Laux
Keyboard, Musician's exercising
Knit drawers Lady's M. Saldin Junction-box. M. Laux
Keyboard, Mnsician's exercising.
A. K. Virgll
Knit drawers. Lady's. M. Saldin
Knitting-machine. E. Vermilyea et al
Knob and bell, Combined door.
R. Hazelrigg
Krant-cutter. J. S. Randolph
Labels or wrappers to blocks, packages, or
tins, or other containers of material, Apparatus for applying. W. and H. Rose
Ladder attachment. E. J. Curran
Lamp-burner. O. M. Muller
Lamp-chimney, Composite. G. D. Willits
Lamp, Incandescent gas. J. Rubin
Lamp, Miner's. P. Togleson
Lamp, Projecting. G. A. H. Kellner
Lamps, Pull-socket for electric incandescent. J. L. Moore
Lautern-holder. N. D. Bjorklund
Latch. F. C. Altmann
Latch tool-post. H. Haldy
Laundry-iron. E. R. Smith
Leatber and product thereof, Coloring.
Leather-skiving machine. J. R. Scott Leather and product thereof, Coloring...

M. M. Gregg
Leather-skiving machine... J. R. Scott
Leather-working tool... C. F. Punsky
Level attachment, Plumb... W. A. Goble
Lifting inch

Package-protector. A. Griesbeek Packing. F. Hodgkinson Pad-holder. W. E. Dunning Paper dishes, Machine for making.

I. Bertin Paper fixture, Toilet 2 pats.

H. J. Williams Paper-making machinery. J. A. Noble Paper receptacles, Machine for forming and attaching fasteners to... C. D. Grimes Pen and pencil box. F. Hasselberger Penbolder and pen therefor. G. B. Elliott Perambulator, Foldable. C. E. Fanning Petticoat-band-adjusting device.

C. H. Lewy Piano-hammers, Removable mold for making. 2 pats. E. T. Wolf
Pin. W. H. Rice
Pipe and the like cutter. J. R. Hamilton
Pipe-coupling. F. N. Cronholm
Pipes, Covering. E. A. Kellam
Pistol. Automatie. C. P. Clement
Planter, Corn. T. N. Seay
Planter, Cotton. G. W. Copeland
Plow. O. H. Pecples
Plow vine-eutting attachment.

W. R. Melson
Plug-switch. H. E. Leppert
Plume. L. Montilli
Pocket-knife. J. L. and W. Schrade
Pole-tip. L. L. Moore Pole-tip.....L. L. Moore
Poultry drinking-fountain....F. Enos, Jr.

Sash-weight, Sectional C. R. Brown Saw-guide. J. L. Skeith Section. J. L. Skeith Section. J. L. Skeith Section. J. J. Arphilosophy Compet. J. J. Arphilosophy Compet. J. J. Arphilosophy C. Starter, J. J. J. Arphilosophy C. Starter, J. J. J. R. Hillwood Scraper, Wheel. J. J. J. R. Hillwood Scraper, Wheel. J. J. J. R. Kell Secreption. J. J. R. Renket et al Secrebi-light, projector and the like section of property of the like section. J. J. R. Renket et al Secrebilight, projector and the like section. J. J. R. Renket et al Secrebilight, projector and the like section. J. J. Renket et al Secrebilight, projector and the like section. J. J. Renket et al Secrebilight, projector and the like section. J. J. Renket et al Secrebilight, projector and the like section. J. J. Renket et al Secrebilight, projector and the like section. J. J. Renket et al Secrebility of the section. J. J. Renket et al Secrebility of the section. J. J. Renket et al Secrebility of the section. J. L. Bulasky sewing-machines. Extension-leaf-alrehing mechanism for . C. E. Colegrove Made-langer and curtain-support. J. Renket H. M. Barber shear or seissors. Cushion for hills of the section of the se	nw-guide J. L. Skeith cale H. S. Hallwood craper D. J. Arpin craper R. C. Glise craper. Wheel W. H. Thomas et al preen-frame S. T. Ashbaush cythe-snath fastener M. W. Hunsaker cal for pipe connections. Sheet-metal J. D. Renick et al carch-light, projector and the like H. Viertel condary battery G. J. Johnson ced-case A. E. McKenzie ced-dropping mechanism J. Streitz cythe-grantion. Process of H. A. Wentworth cythe-machine work guide or gage L. Bulasky owing-machines. Extension-leaf-latching mechanism for C. E. Colegrove nade-guide P. G. Emery nade-langer and curtain-support B. Krenzberger nears or scissors. Cushion for handles of C. W. Tindall neet-delivery mechanism, Variable-size-flat H. M. Barber neet-registering device L. E. Morrison nips, Means for damping the rolling motion of H. Frahm nock-conveying machine. G. M. Clagett noe R. Helbig noe-horn and button-hook. L. Davidoff noe-horn and button-hook. L. E. Foster gening system. H. O. Rugh lo G. G. Griswold ster-hook L. E. Foster teaks of silk and like materials. Apparatus for stretching and drying J. Knott ack-ardinster G. A. Goddin et al mall-arms. One-trigger mechanism for double-barrel breech-loading J. Ropting from the stretching machine C. A. Grarell odium cyanid, Making Le Foster teak-ardinster G. A. Rush noed-indicator for motor-cars and other vehicles G. F. G. Agrell odium cyanid, Making C. Smith bindle-driving bands, Mechanism for guid-ing and tensioning J. Boyd ninning-machine. spindle C. C. Smith bindle-driving bands, Mechanism for guid-ing and tensioning J. Boyd ninning-machine spindle C. C. Smith bindle-driving bands, Mechanism for guid-ing and tensioning F. G. Agrell diluming-machine spindle C. Smith bindle-driving bands, Mechanism for guid-ing and tensi
scale. H. S. Hallwood becaper. D. J. Arpin becaper. D. J. Arpin becaper. Wheel. W. H. Thomas et al except-frame. S. T. Ashbaneb Levene-frame. S. L. Bulasky Levene-frame. S. Extension-leaf-latching mechanism process of . H. A. Wentworth Levene-frame. S. Extension-leaf-latching mechanism for . C. E. Cologrow Lande-unide. S. L. Bulasky Levene-frame. S. Extension-leaf-latching mechanism for . C. E. Cologrow Lande-unide. S. C. W. Tindall Levene-frame. S. C. M. Clargett Levene-frame. S. C. A. Gothing Levene-frame. S. G. A. Gothing Levene-frame. S. C. A. Rush Levene-frame. S. C. C. A. Rush Levene-frame. S. C. C. A. Rush Levene-fra	cale. H. S. Hallwood craper. D. J. Arpin craper. R. C. Glise craper. Wheel. W. H. Thomas et al spreen-frame. S. T. Ashbangh cythe-snath fastener. M. W. Hunsaker cal for pipe connections. Sheet-metal J. D. Renick et al carch-light, projector and the like H. Viertel condary battery. G. J. Johnson ced-case. A. E. McKenzie ced-dropping mechanism. J. Streitz charation, Process of H. A. Wentworth characteristic condary battery. G. J. Johnson ced-case. A. E. McKenzie characteristic condary battery. G. J. Johnson ced-case. A. E. McKenzie characteristic condary battery. G. J. Johnson ced-case. A. E. McKenzie characteristic condary battery. G. J. Streitz characteristic condary battery. G. J. Streitz characteristic condensation. J. Streitz characteristic characteristic condensation. L. Bulasky wing-machines. Extension-leaf-latching mechanism for C. C. E. Colegrove nade-hanger and curtain-support B. Kreuzberger lears or scissors. Cushion for handles of C. W. Tindall condensation. L. M. M. Barber neet-registering device. L. E. Morrison lips, Means for damping the rolling motion of H. Frahm lock-conveying machine. G. M. Clagett loce. L. F. Raymond loce. R. Helbig loce-horn and button-hook. L. Davidoff loce-horn and button-hook. L. Davidoff loce-horn and button-hook. Combined L. Foster series of silk and like materials. Apparatus for stretching and drying. J. Knott ack-adhister. A. R. Duffy ed-knee. G. J. Goddin et all mall-arms. One-trigger mechanism for double-barrel breech-loading F. G. Agrell dium cyanid, Making. O. Liebknecht hard-arms for machine. S. Z. de Ferrantion linning-machine. S. Z. de Ferrantion linning-machine spindle. J. V. Conniff blinchar and tensioning. J. Boyd ninning-machine spindle. J. V. Conniff blinchar and tensioning. F. Ziganek love. Collapsible eamping. A. Kurt ove oven, Cooking. F. Ziganek love. Collapsible ea
craper. Wheel. W. H. Thomas et al ercene-frame. S. The Ashbanesh and ercene-frame. S. The Ashbanesh and ercene-frame. S. The Ashbanesh and ercene-frame. S. Nect-messake et al ercene-frame and the like correlation. J. D. Benick et al Escreb-light, projector and the like search-light, projector and the like search-light, projector and the like correlation. J. D. Benick et al Escreb-light, projector and the like search-light, projector and the like conditions are search as the search-light projector. J. D. Streitz eparation. Process of . H. A. Wentworth very sewing-machine work guide or sage,	praper. Wheel. W. H. Thomas et al preparation of the property of the state of the property of
search-light, projector and the like secondary battery G. J. Johnson (seed-case A. E. McKenzie (seed-dropping mechanism J. Streitz (seed-dropping mechanism J. Streitz (seed-dropping mechanism J. Streitz (seed-archy) Process of .H. A. Wentworth (seed-case A. E. McKenzie (seed-dropping mechanism J. Streitz (seed-archy) Process of .H. A. Wentworth (seed-archy) Process of .H. A. Mentworth (seed-archy) Process of .H. A. Mentworth (seed-archy) Process of .H. A. Mentworth (seed-archy) Process of .H. A.	carch-light, projector and the like H. Viertel H. Viertel G. J. Johnson ed-case A. E. McKenzie bed-dropping mechanism J. Streitz paration, Process of Edd-dropping mechanism J. Streitz paration, Process of Wentworth wing-machine work guide or gage L. Bulasky wing-machines. Extension-leaf-latching mechanism for C. E. Colegrove made-guide B. Krenzberger and curtain-support B. Krenzberger and curtain-support C. W. Tindall cet-delivery mechanism, Variable-size-flat H. M. Barber and size-flat flat has been described in the size-flat size-flat flat has been described in the size-flat flat flat flat flat flat flat flat
search-light, projector and the like secondary battery G. J. Johnson (seed-case A. E. McKenzie (seed-dropping mechanism J. Streitz (seed-dropping mechanism J. Streitz (seed-dropping mechanism J. Streitz (seed-archy) Process of .H. A. Wentworth (seed-case A. E. McKenzie (seed-dropping mechanism J. Streitz (seed-archy) Process of .H. A. Wentworth (seed-archy) Process of .H. A. Mentworth (seed-archy) Process of .H. A. Mentworth (seed-archy) Process of .H. A. Mentworth (seed-archy) Process of .H. A.	carch-light, projector and the like H. Viertel H. Viertel G. J. Johnson ed-case A. E. McKenzie bed-dropping mechanism J. Streitz paration, Process of Edd-dropping mechanism J. Streitz paration, Process of Wentworth wing-machine work guide or gage L. Bulasky wing-machines. Extension-leaf-latching mechanism for C. E. Colegrove made-guide B. Krenzberger and curtain-support B. Krenzberger and curtain-support C. W. Tindall cet-delivery mechanism, Variable-size-flat H. M. Barber and size-flat flat has been described in the size-flat size-flat flat has been described in the size-flat flat flat flat flat flat flat flat
search-light, projector and the like secondary battery G. J. Johnson (seed-case A. E. McKenzie (seed-dropping mechanism J. Streitz (seed-dropping mechanism J. Streitz (seed-dropping mechanism J. Streitz (seed-archy) Process of .H. A. Wentworth (seed-case A. E. McKenzie (seed-dropping mechanism J. Streitz (seed-archy) Process of .H. A. Wentworth (seed-archy) Process of .H. A. Mentworth (seed-archy) Process of .H. A. Mentworth (seed-archy) Process of .H. A. Mentworth (seed-archy) Process of .H. A.	carch-light, projector and the like H. Viertel H. Viertel G. J. Johnson ed-case A. E. McKenzie bed-dropping mechanism J. Streitz paration, Process of Edd-dropping mechanism J. Streitz paration, Process of Wentworth wing-machine work guide or gage L. Bulasky wing-machines. Extension-leaf-latching mechanism for C. E. Colegrove made-guide B. Krenzberger and curtain-support B. Krenzberger and curtain-support C. W. Tindall cet-delivery mechanism, Variable-size-flat H. M. Barber and size-flat flat has been described in the size-flat size-flat flat flat flat flat flat flat flat
seed-ase, seed-droppins mechanism. J. Streitz is eparation, Process of H. A. Wentworth sewing-machine work guide or gage	ed-case
seed-ase, seed-droppins mechanism. J. Streitz is eparation, Process of H. A. Wentworth sewing-machine work guide or gage	ed-case
mechanism for C. E. Colegrove Made-gride. D. P. G. Emery hade-hanger and curtain-support. Secretary of the college of the coll	mechanism for C. E. Colegrove ade-guide P. G. Emery ade-guide P. G. Emery ade-hanger and curtain-support B. Krenzberger dears or scissors. Cushion for handles of C. W. Tindall deet-delivery mechanism, Variable-size-flat H. M. Barber deet-registering device L. E. Morrison deet-delivery mechanism, Variable-size-flat H. M. Barber deet-registering device L. E. Morrison deet-delivery mechanism, Variable-size-flat H. M. Barber deet-registering device L. E. Morrison deet H. Frahm dock conveying machine G. M. Clagett deet H. Frahm dock L. Davidoff doce L.
mechanism for C. E. Colegrove Made-gride. D. P. G. Emery hade-hanger and curtain-support. Secretary of the college of the coll	mechanism for C. E. Colegrove ade-guide P. G. Emery ade-guide P. G. Emery ade-hanger and curtain-support B. Krenzberger dears or scissors. Cushion for handles of C. W. Tindall deet-delivery mechanism, Variable-size-flat H. M. Barber deet-registering device L. E. Morrison deet-delivery mechanism, Variable-size-flat H. M. Barber deet-registering device L. E. Morrison deet-delivery mechanism, Variable-size-flat H. M. Barber deet-registering device L. E. Morrison deet H. Frahm dock conveying machine G. M. Clagett deet H. Frahm dock L. Davidoff doce L.
mechanism for C. E. Colegrove Made-gride. D. P. G. Emery hade-hanger and curtain-support. Secretary of the college of the coll	mechanism for C. E. Colegrove ade-guide P. G. Emery ade-guide P. G. Emery ade-hanger and curtain-support B. Krenzberger dears or scissors. Cushion for handles of C. W. Tindall deet-delivery mechanism, Variable-size-flat H. M. Barber deet-registering device L. E. Morrison deet-delivery mechanism, Variable-size-flat H. M. Barber deet-registering device L. E. Morrison deet-delivery mechanism, Variable-size-flat H. M. Barber deet-registering device L. E. Morrison deet. C. M. Clagett deet. C. Davidoff deet. Devidoff
shade-hanger and curtain-support shade sha	nade-hanger and curtain-support. B. Krenzberger C. W. Tindall neet-delivery mechanism, Variable-size-flat H. M. Barber neet-registering device. L. E. Morrison nips, Means for damping the rolling mo- tion of. H. Frahm nock-conveying machine. G. M. Clagett noe. E. F. Raymond noe. R. Helbig noe-horn and button-hook. L. Davidoff noe-horn and button-hook. Combined. L. Davidoff novel. B. C. Olmsted mutter-worker. C. A. Gothing ffer. Ash. H. Hougk gnaling system. H. O. Rugh ster-hook. L. E. Foster teins of silk and like materials, Apparatus for stretching and drying. J. Knott ack-adjuster. A. R. Duffy ed-knee. G. J. Goddin et al mall-arms, One-trigger mechanism for double-barrel breech-loading.
shears or scissors, Cushion for handles of. Sheet-delivery mechanism, Variable-size-flat Sheet-delivery mechanism, Variable-size-flat Sheet-registering device. L. E. Morrison Ships, Means for damping the rolling mo- thorous Means for damping Means for damping Sired Means for damping Means for damping Sired Means for stretching and drying J. Knott slack-adhister. G. J. Gaddin et al small-arms. One-trigger mechanism for double-barrel breech-loading. J. Roll Show-plow. G. W. Rugeles Song-cutting machine. 2 pats Show-plow. G. W. Rugeles Song-cutting machine. 2 pats Show-plow. G. W. Rugeles Song-cutting machine. 2 pats Show-plow. G. W. Rugeles Song-cutting machine. 3 pats Show-plow. G. W. Rugeles Song-cutting machine. 3 pats Show-plow. G. W. Rugeles Song-cutting machine. 4 pats Show-plow. G. W. Rugeles Song-cutting machine. 5 pats Show-plow. G. W. Rugeles Song-cutting machine. 6 pats Show-plow. G. W. Rugeles Song-cutting machine. 7 pats Show-plow. 6	nears or scissors. Cushion for handles of. C. W. Tindall neet-delivery mechanism, Variable-size-flat H. M. Barber neet-registering device. L. E. Morrison nips, Means for damping the rolling mo- tion of. H. Frahm nock-conveying machine. G. M. Clarett noe. E. F. Raymond noe. R. Helbig noe-horn and button-hook. L. Davidoff noe-horn and button-hook, Combined. L. Davidoff noel-horn and button-hook, Combined. M. L. Davidoff noel-norn and button-hook, Combined mutter-worker. C. A. Gothing fter. Ash. H. Hougk gnaling system. H. O. Rugh no. G. G. Griswold ster-hook. L. E. Foster reins of silk and like materials, Apparatus for stretching and drying. J. Knott ack-adinster. A. R. Duffy ed-knee. G. J. Goddin et al mall-arms, One-trigger mechanism for double-barrel breech-loading. Dow-plow. G. W. Ruggles hap-dispensing machine. Data C. W. Aiken hark-arrester. C. A. Rush hoed-indicator for motor-cars and other vehicles. C. C. Smith bindle-driving bands, Mechanism for guid- ing and tensioning. J. Boyd ninulng-machine spindle. J. V. Conniff blice-bar. G. Malmros et al bring-seat structures. Border-wire rein- forcement for. L. A. Young machine. G. Buermann nacker. Pneumatic. G. F. Conner namp. Time. W. J. English orage battery. R. N. Chamberlain ove, Collapsible eamping. A. Kurt ove oven, Cooking. F. Ziganek oves, Electric igniting device for gas. C. Stamm mar, Making grape. G. Eekstrom wills reget with the cook. C. Stamm mar, Making grape. G. Eekstrom wills reget halisterles. G. G. Eckstrom wills reget halisterles. G. Eekstrom G. Stamm G. Eekstrom G. Stamm G. Stamm G. Eekstrom G. Stamm G. Stamm G. Stamm G. Eekstrom G. Stamm G. Eekstrom G. Stamm G. Stamm G. Stamm G. Sta
theet-delivery mechanism, Variable-size-flat sheet-registering device. L. E. Morrison hips, Means for damping the rolling mo- tion of. H. Frahm hock-conveying machine. G. M. Clagett hoe. E. F. Raymond hoe. E. F. Raymond hoe. E. F. Raymond hoe. Davidoff shoe-horn and button-hook. Combined. L. Davidoff hoe-horn and button-hook. Combined. L. Davidoff hoe-horn and button-hook. Combined. H. C. A. Gothing lifter, Ash. H. Hough lifter, Ash. H. Hough lifter, Ash. H. Hough lifter, Ash. H. Hough lifter, Ash. H. O. Rugh lifter, Ash. Rugh lifter, Ash. H. M. Rugh lifter, Ash. H. M. Holden lifter, Ash. H. Rugh lifter, Ash. H. Rugh lifter, Ash. H. Rugh lifte	C. W. Findall cet-delivery mechanism, Variable-size-flat H. M. Barber heet-registering device L. E. Morrison hips, Means for damping the rolling mo- tion of H. Frahm hock-conveying machine. G. M. Clagett hoe E. F. Raymond hoe R. Helbig hoe-horn and button-hook. L. Davidoff hoe-horn and button-hook. Combined. hovel B. C. Olmsted hotele L. Davidoff hoe-horn and button-hook. Combined. hovel B. C. Olmsted hotele H. Hougk graling system. H. O. Rugh ho G. G. Griswold hoe-horn of silk and like materials, Apparatus for stretching and drying. J. Knott hock-adjuster. A. R. Duffy hoed-knee. G. J. Goddin et al hall-arms, One-trigger mechanism for how-plow. G. W. Ruggles hop-cutting machine. C. W. Aiken hop-dispensing machine. 2 pats. holdium cyanid, Making. O. Liebknecht hoark-arrester. C. A. Rush hondeles. C. C. Smith hindle-driving bands, Mechanism for guid- hing and tensioning. J. Boyd hinning-machine spindle. J. V. Conniff holice-bar. S. G. Davis hoon-gage. F. N. Cronholm hot-cleaner. G. Malmros et al horing-seat structures. Border-wire rein- forcement for L. A. Young hur. G. Buermann horing-machine spindle. J. V. Conniff holice-bar. G. F. Conner horing-seat structures. Border-wire rein- forcement for L. A. Young hur. G. Buermann horing-machine spindle. J. V. Conniff holice-bar. G. F. Conner horing-seat structures. Border-wire rein-
chiest-registering device. L. E. Morrison hips, Means for damping the rolling motion of H. Frahm hock-conveying machine. G. M. Clagett theo. E. F. Raymond hoc. E. F. Raymond hoc. E. F. Raymond hoc. E. F. Raymond hoc. M. L. Davidoff thoe-horn and button-hook. Combined L. Davidoff theorem of the combined of the	meet-registering device. L. E. Morrison hips, Means for damping the rolling motion of. H. Frahm mock-conveying machine. G. M. Clarett too. E. F. Raymond hoe. R. Helbig hoe-horn and button-hook. L. Davidoff hoe-horn and button-hook, Combined. L. Davidoff hovel. B. C. Olmsted hutter-worker. C. A. Gothing fter. Ash. H. Hougk gnaling system. H. O. Rugh ho. G. G. Griswold ster-hook. L. E. Foster veins of silk and like materials. Apparatus for stretching and drying. J. Knott ack-adjuster. A. R. Duffy hed-knee. G. J. Goddin et al mall-arms, One-trigger mechanism for double-barrel breech-loading. L. B. Taylor how-plow. G. W. Ruggles hop-cutting machine. C. W. Aiken hark-arrester. C. A. Rush hoark-arrester. C. A. Rush hoark-arrester. C. A. Rush hoed-indicator for motor-cars and other vehicles. C. C. Smith bindle-driving bands, Mechanism for guiding and tensioning. J. Boyd hinning-machine. S. Z. de Ferranti bindle-driving bands, Mechanism for guiding and tensioning. J. Boyd hinning-machine spindle. J. V. Conniff blice-bar. S. G. Davis hoot-cleaner. G. Malmros et al bring-seat structures. Border-wire reinforcement for L. A. Young hur. G. Buermann hort-cleaner. G. Malmros et al bring-seat structures. Border-wire reinforcement for L. A. Young hur. G. Buermann hort-cleaner. G. F. Conner amp. Time. W. J. English orage battery. R. N. Chamberlain ove. C. Collapsible eamping. A. Kurt ove oven, Cooking. F. Ziganek oves, Collapsible eamping. G. Eekstrom dellar ceet Miller and Mil
things, Aleans for damping the folling motion of the conveying machine of M. Clagett holes of the conveying machine of the conveying mac	nips, Means for damping the rolling motion of
things, Aleans for damping the folling motion of the conveying machine of M. Clagett holes of the conveying machine of the conveying mac	nips, Means for damping the rolling motion of
hovel	L. Davidoff hovel
hovel	L. Davidoff hovel
hovel	L. Davidoff hovel
thorel. B. C. Olmsted Muttersworker. C. A. Gothing lifter. Ash	novel
discreling system. H. O. Rugh Willon. G. G. Griswold ister-hook. L. E. Foster Wikens of silk and like materials. Apparatus for stretching and drying. J. Knott Mack-adhuster. A. R. Duffy Micel-Ruee. G. J. Goddin et all small-arms. One-trigger mechanism for double-barrel breech-loading. J. Knott Mack-adhuster. A. R. Duffy Micel-Ruee. G. J. Goddin et all small-arms. One-trigger mechanism for double-barrel breech-loading. J. Knott Mack-armser of the Micel-Barrel breech-loading. J. Macy-condition of the Micel-Barrel breech-loading. J. G. W. Alken Moon-dispensing machine. C. W. Alken Moon-dispensing machine. C. W. Alken Moon-dispensing machine. J. C. A. Rush Mack-armsester. C. A. Rush Mack-armsester. C. C. Smith Mack-armsester. C. C. Smith Mack-armsester. M. C. C. M. Miller Mack-armsester. M. M. M. Melden Mack-armsester. M. M. M. Miller Mack-armsester. M. M. M. Miller Mack-armsester. M. M. M. Molden Mack-armsester. M. M. M.	gnaling system
discreling system. H. O. Rugh Willon. G. G. Griswold ister-hook. L. E. Foster Wikens of silk and like materials. Apparatus for stretching and drying. J. Knott Mack-adhuster. A. R. Duffy Micel-Ruee. G. J. Goddin et all small-arms. One-trigger mechanism for double-barrel breech-loading. J. Knott Mack-adhuster. A. R. Duffy Micel-Ruee. G. J. Goddin et all small-arms. One-trigger mechanism for double-barrel breech-loading. J. Knott Mack-armser of the Micel-Barrel breech-loading. J. Macy-condition of the Micel-Barrel breech-loading. J. G. W. Alken Moon-dispensing machine. C. W. Alken Moon-dispensing machine. C. W. Alken Moon-dispensing machine. J. C. A. Rush Mack-armsester. C. A. Rush Mack-armsester. C. C. Smith Mack-armsester. C. C. Smith Mack-armsester. M. C. C. M. Miller Mack-armsester. M. M. M. Melden Mack-armsester. M. M. M. Miller Mack-armsester. M. M. M. Miller Mack-armsester. M. M. M. Molden Mack-armsester. M. M. M.	gnaling system
Tor stretching and drying . J. Knott klack-adhuset . A. R. Duffy klack-knee . G. J. Goddin et al. Immall-arms, One-trigger mechanism for double-barrel breech-loading L. B. Taylor know-plow L. B. Taylor know-plow	ack-adjuster
Tor stretching and drying . J. Knott klack-adhuset . A. R. Duffy klack-knee . G. J. Goddin et al. Immall-arms, One-trigger mechanism for double-barrel breech-loading L. B. Taylor know-plow L. B. Taylor know-plow	ack-adjuster
now-plow G. W. Ruggles soap-entting machine. C. W. Alken soap-entting machine. C. G. A. Rush speed-indicator for motor-cars and other vehicles. C. C. Smith spindle-driving bands, Mechanism for guiding and tensioning. J. Boyd simining-machine. S. Z. de Ferranti spining-machine. S. Z. de Ferranti spining-machine. S. Z. de Ferranti spining-machine. S. Z. de Ferranti spining-seat structures. G. Malmros et al spining-seat structures. Border-wire reinforcement for. L. Voung simular spining-seat structures. Border-wire reinforcement for. L. Voung strucker. Pneumatic. G. F. Conner stramp, Time. W. J. English storage battery. R. N. Chamberlain stove. C. H. Miller stove. Collansible eamping. A. Kurt stove oven, Cooking. F. Ziganek stoves. Electric igniting device for gas. C. Stamm sulky-seat. Adiustable. A. Wishire surporting-post. R. E. Rudd stable. W. Pelishek stoves. Electric igniting device for gas. C. Stamm sulky-seat. Adiustable. A. Wishire innocrting-post. R. E. Rudd stable. W. Pelishek stoves. Electric igniting backings for artificial. F. S. Sawaya seleganph-pole and the like. 4 pats. R. Washire innocrting-post. R. H. D. Currier selenhone-meter and eirenit connection stretchmen attachment. A. C. Hewitt et al selenhone-drop. A. H. Weiss elenhone-meter and eirenit connection structure-regulator. F. R. Sawaya selenhone-transmitters. Covering for month-pieces of. A. K. Cann elenhone-transmitters. Covering for month-pieces of. A. K. Cann elenhone-transmitter. Covering for month-pieces of. A. K. Rosenbeck soll-biding block. J. C. Enckley soll-biding block. J. C. Enckley soll-biding block. J. C. Enckle	
now-plow G. W. Ruggles soap-entting machine. C. W. Alken soap-entting machine. C. G. A. Rush speed-indicator for motor-cars and other vehicles. C. C. Smith spindle-driving bands, Mechanism for guiding and tensioning. J. Boyd simining-machine. S. Z. de Ferranti spining-machine. S. Z. de Ferranti spining-machine. S. Z. de Ferranti spining-machine. S. Z. de Ferranti spining-seat structures. G. Malmros et al spining-seat structures. Border-wire reinforcement for. L. Voung simular spining-seat structures. Border-wire reinforcement for. L. Voung strucker. Pneumatic. G. F. Conner stramp, Time. W. J. English storage battery. R. N. Chamberlain stove. C. H. Miller stove. Collansible eamping. A. Kurt stove oven, Cooking. F. Ziganek stoves. Electric igniting device for gas. C. Stamm sulky-seat. Adiustable. A. Wishire surporting-post. R. E. Rudd stable. W. Pelishek stoves. Electric igniting device for gas. C. Stamm sulky-seat. Adiustable. A. Wishire innocrting-post. R. E. Rudd stable. W. Pelishek stoves. Electric igniting backings for artificial. F. S. Sawaya seleganph-pole and the like. 4 pats. R. Washire innocrting-post. R. H. D. Currier selenhone-meter and eirenit connection stretchmen attachment. A. C. Hewitt et al selenhone-drop. A. H. Weiss elenhone-meter and eirenit connection structure-regulator. F. R. Sawaya selenhone-transmitters. Covering for month-pieces of. A. K. Cann elenhone-transmitters. Covering for month-pieces of. A. K. Cann elenhone-transmitter. Covering for month-pieces of. A. K. Rosenbeck soll-biding block. J. C. Enckley soll-biding block. J. C. Enckley soll-biding block. J. C. Enckle	
mow-plow G. W. Rugeles Soap-entiting machine C. W. Alken Soap-dispensing machine 2 pats	L. B. Taylor now-plow G. W. Ruggles nap-cutting machine C. W. Aiken nap-dispensing machine 2 pats F. G. Agrell dium cyanid, Making O. Liebknecht nark-arrester C. A. Rush need-indicator for motor-cars and other webicles C. C. Smith nindle-driving bands, Mechanism for guid- ing and tensioning J. Boyd ninning-machine S. Z. de Ferranti ninning-machine spindle J. V. Conniff plice-bar S. G. Davis noon-gage F. N. Cronholm not-cleaner G. Malmros et al pring-seat structures. Border-wire rein- forcement for L. A. Young nur. G. Buermann nacker. Pneumatic G. F. Conner namp. Time W. J. English orage battery R. N. Chamberlain ove C. H. Miller ove, Collapsible eamping A. Kurt ove oven, Cooking F. Ziganek oves, Electric igniting device for gas C. Stamm mgar, Making grape G. Eekstrom willer geet Miller of the Willer of Willer.
speed-indicator for motor-cars and other vehicles. C. C. Smith spindle-driving bands, Mechanism for guiding and tensioning. J. Boyd dinning-machine. S. Z. de Ferranti Spinning-machine spindle. J. V. Conniff Police-bar. S. G. Davis Spot-leaner. S. G. Davis Spot-eleaner. G. Malmros et al Spring-seat structures. Border-wire reinforcement for L. A. Young further forcement for gas. L. C. Stamm forcement for gas. L. C. Stamm forcement for gas. L. A. Wilshire further forcement for making backings for artificial. F. S. Sawaya forceth. Anparatus for making backings for artificial. F. S. Sawaya forceth. Anparatus for making backings for artificial. F. S. Sawaya forceth. Anparatus for making backings for artificial. F. S. Sawaya forceth. A. H. Weiss felenhone antachment. A. C. Hewitt et al following forcement for gas. L. M. Weiss felenhone antachment. A. C. Hewitt et al following force forcement for monther forcement for monther felenhone-transmitter. C. Adams-Randall following forcement for monther forcement for monther felenhone-transmitters. Covering for monther felenhone-transmitters. Covering for monther felenhone-transmitters. Covering for monther felenhone-transmitters. Covering for monther forcement forc	need-indicator for motor-cars and other vehicles
speed-indicator for motor-cars and other vehicles. C. C. Smith spindle-driving bands, Mechanism for guiding and tensioning. J. Boyd dinning-machine. S. Z. de Ferranti Spinning-machine spindle. J. V. Conniff Police-bar. S. G. Davis Spot-leaner. S. G. Davis Spot-eleaner. G. Malmros et al Spring-seat structures. Border-wire reinforcement for L. A. Young further forcement for gas. L. C. Stamm forcement for gas. L. C. Stamm forcement for gas. L. A. Wilshire further forcement for making backings for artificial. F. S. Sawaya forceth. Anparatus for making backings for artificial. F. S. Sawaya forceth. Anparatus for making backings for artificial. F. S. Sawaya forceth. Anparatus for making backings for artificial. F. S. Sawaya forceth. A. H. Weiss felenhone antachment. A. C. Hewitt et al following forcement for gas. L. M. Weiss felenhone antachment. A. C. Hewitt et al following force forcement for monther forcement for monther felenhone-transmitter. C. Adams-Randall following forcement for monther forcement for monther felenhone-transmitters. Covering for monther felenhone-transmitters. Covering for monther felenhone-transmitters. Covering for monther felenhone-transmitters. Covering for monther forcement forc	need-indicator for motor-cars and other vehicles
speed-indicator for motor-cars and other vehicles. C. C. Smith spindle-driving bands, Mechanism for guiding and tensioning. J. Boyd dinning-machine. S. Z. de Ferranti Spinning-machine spindle. J. V. Conniff Police-bar. S. G. Davis Spot-leaner. S. G. Davis Spot-eleaner. G. Malmros et al Spring-seat structures. Border-wire reinforcement for L. A. Young further forcement for gas. L. C. Stamm forcement for gas. L. C. Stamm forcement for gas. L. A. Wilshire further forcement for making backings for artificial. F. S. Sawaya forceth. Anparatus for making backings for artificial. F. S. Sawaya forceth. Anparatus for making backings for artificial. F. S. Sawaya forceth. Anparatus for making backings for artificial. F. S. Sawaya forceth. A. H. Weiss felenhone antachment. A. C. Hewitt et al following forcement for gas. L. M. Weiss felenhone antachment. A. C. Hewitt et al following force forcement for monther forcement for monther felenhone-transmitter. C. Adams-Randall following forcement for monther forcement for monther felenhone-transmitters. Covering for monther felenhone-transmitters. Covering for monther felenhone-transmitters. Covering for monther felenhone-transmitters. Covering for monther forcement forc	need-indicator for motor-cars and other vehicles
yepfeles. yepfeles. yepfeles. yepfeles. yepfeles. yepfeled. yepfeles.	repteles. C. C. Smith beindle-driving bands, Mechanism for guiding and tensioning. J. Boyd hinning-machine. S. Z. de Ferranti binning-machine spindle. J. V. Conniff bilice-bar. S. G. Davis boon-gage F. N. Cronholm bot-cleaner. G. Malmros et al bring-seat structures. Border-wire reinforcement for. L. A. Young bur. G. Buermann acker. Pneumatic. G. F. Conner amp. Time. W. J. English orage battery. R. N. Chamberlain ove. C. H. Miller ove, Collapsible eamping. A. Kurt ove oven, Cooking. F. Ziganek oves, Electric igniting device for gas. C. Stamm gaar, Making grape. G. Eckstrom gally geats Miller cook. Miller over Miller cook.
spindle-driving bands, Mechanism for guid- lng and tensioning J. Boyd kninning-machine S. Z. de Ferranti toinning-machine spindle J. V. Conniff typilce-bar S. G. Davis spoon-gage F. N. Cronholm spoon-gage F. N. Chamber et al spring-seat structures. Border-wire rein- forcement for L. A. Young mur G. Buermann stacker. Pneumatic G. F. Conner stramp. Time W. J. English torage battery R. N. Chamberlain V. tove. Collansible eamping A. Kurt tove oven. Cooking F. Ziganek stoves. Electric igniting device for gas C. Stamm vingar. Making grape G. Eckstrom sulky-seat. Adiustable A. Wilshire sunnorting-post R. E. Rudd valley. R. R. Chamberlain spoon-gage R. R. Chamberlain spoon-gage S. Sawaya velegraph-pole and the like. 4 pats V. relepraph-pole and the like. 4 pats R. Haskell velephone apparatus G. Babcock relephone-meter and eircuit connection therefor R. H. Manson velephone-meter and eircuit connection therefor R. H. Manson velephone-reneater C. Adams-Randall relephone-ransmitter M. K. Cann relephone-transmitters. Covering for month- pieces of A. K. Can relephone-transmitters. Covering for month- pieces of A. K. Can relephone-transmitters. Covering for month- pieces of A. K. Can relephone-transmitters. Covering for month- pieces of A. K. Can relephone-transmitters. Covering for month- pieces of A. K. Can relephone-transmitters. Covering for month- pieces of A. K. Can relephone-transmitters. Covering for month- pieces of A. K. Can relephone-transmitters. Covering for month- pieces of A. K. Can relephone-transmitters. Covering for month- pieces of A. K. Rosenbeck relephone-transmitters. Covering for month-	pindle-driving bands, Mechanism for guiding and tensioning
mining-machine spindle. J. V. Conniff phice-bar. S. G. Davis phonon-gase. F. N. Crombolm spot-cleaner. G. Mahmros et al spring-seat structures. Border-wire reinforcement for. L. A. Young mur. G. Buermann vincker. Pneumatic. G. F. Conner titamp. Time. W. J. English torage battery. R. N. Chamberlain towe. C. H. Miller towe. C. H. Miller towe. C. Collapsible eamping. A. Kurt victore oven, Cooking. F. Ziganek victores, Electric igniting device for gas. Victores,	mining-machine
prince-par.	obon-gage
proportion of the print of the	non-gage. F. N. Cronholm obt-cleaner. G. Malmros et al oring-seat structures. Border-wire reinforcement for. L. A. Young our G. Buermann acker. Pneumatic. G. F. Conner amp. Time. W. J. English orage battery. R. N. Chamberlain ove. C. H. Miller ove. Collapsible eamping. A. Kurt ove oven, Cooking. F. Ziganek oves, Electric igniting device for gas. C. Stamm gar. Making grape. G. Eckstrom
stamp. Time. W. J. English torage battery. R. N. Chamberlain V. tove. Cllansible eamping A. Knrt vitove. Collansible eamping A. Knrt vitove oven, Cooking. F. Ziganek V. Chamberlain V. V. Chamberlain V. C. Starm M. C. Starkey M. C. Sta	amp. Time
stamp. Time. W. J. English torage battery. R. N. Chamberlain V. tove. Cllansible eamping A. Knrt vitove. Collansible eamping A. Knrt vitove oven, Cooking. F. Ziganek V. Chamberlain V. V. Chamberlain V. C. Starm M. C. Starkey M. C. Sta	amp. Time
stamp. Time. W. J. English torage battery. R. N. Chamberlain V. tove. Cllansible eamping A. Knrt vitove. Collansible eamping A. Knrt vitove oven, Cooking. F. Ziganek V. Chamberlain V. V. Chamberlain V. C. Starm M. C. Starkey M. C. Sta	amp. Time
tove. Collansible eamping. A. Kurt ktove oven. Cooking. F. Ziganek ktoves. Electric ignifing device for gas. V. C. Stamm Congar. Making grape. G. Eckstrom Wilky-seat. Adiustable. A. Wilshire Wilky-seat. Adiustable. B. E. Rudd Wilshire. F. S. Sawaya Wilshire. G. B. Haskell Wilshire. G. A. H. Weiss Wilshire. G. A. H. Weiss Wilshire. G. A. H. Weiss Wilshire. G. A. H. Wanson Wilshire. G. A. H. Wanson Wilshire. G. A. H. Manson Wilshire. G. M. Leich et all Wilshire. G. M. K. Cannellenhone-transmitters. Covering for mouth-pieces of A. K. Cannelmentating. H. L. Wallau et all Phill-coupling. R. Coates Mill-support. F. B. Williams G. Hill-support. F. B. Williams G. H. H. Cummings G. F. W. Heck Wilshire. Demountable. W. Wildner G. J. Szabo G. H. H. H. Cummings Gollet and dressing table. G. M. Itterback Wilshire. Sectional wheel. J. C. Lighthouse G. H. H. Gummings Gollet and dressing table. G. M. Itterback Golled and tool-holder. A. K. Rosenbeck Golled and dressing table. G. M. Itterback Golled and Granshiter. G. C. Davison A. Golled G. G. C. Davison A. Golled G. G. G. C. Davison A. Golled G. G. G. C. Davison A. Golled G. G. G. C.	ove. Collapsible eamping. A. Kurt ove oven, Cooking. F. Ziganek oves, Electric igniting device for gas
tove oven, Cooking. F. Ziganek toves, Electric igniting device for gas. C. Stamm (Cooking) (C. Stamm (Cooking) (C. Stamm (C. Starkey (C. Sta	ove oven, Cooking. F. Ziganek oves, Electric igniting device for gas C. Stamm gar, Making grapeG. Eekstrom
ingar. Making grape. G. Ecistrom Milky-seat. Addinstable. A. Wilshire in the connecting-post. B. E. Rudd Mable. W. Pelishek Coeth. Apparatus for making backings for artificial. F. S. Sawaya Velegraph-pole and the like. 4 pats. Velegraph-pole and the like. 4 pats. Velephone apparatus. G. Babcock Colephone attachment. A. C. Hewitt et al Velephone attachment. A. C. Hewitt et al Velephone-meter and circuit connection of therefor. R. H. Manson Velephone-meter and circuit connection of therefor. R. H. Manson Velephone system. Intercommunicating. M. D. Currier Velephone system. Private-branch intercommunicating. J. L. McOuarrie Celephone-transmitters. O. M. Leich et al Velephone-transmitters. Covering for month-pieces of. A. K. Canne Cemerature-regulator. V. F. Davis Communicating. R. Coates Chill-support. F. B. Williams Chill-counling. R. Coates Chill-support. F. B. Williams Chill-counling. R. Coates Chill-support. F. B. Williams Chill-support. F. B. Williams Chill-counling. R. Coates Chill-support. F. B. Williams Chill-counling. R. Coates Chill-counling. R. Coates Chill-counling. C. J. C. Banks Chill-counling Chill-counling. R. Coates Chill-counling Chill-counlin	ultragest Adjustable A Wilshim
ingar. Making grape. G. Ecistrom Milky-seat. Addinstable. A. Wilshire in the connecting-post. B. E. Rudd Mable. W. Pelishek Coeth. Apparatus for making backings for artificial. F. S. Sawaya Velegraph-pole and the like. 4 pats. Velegraph-pole and the like. 4 pats. Velephone apparatus. G. Babcock Colephone attachment. A. C. Hewitt et al Velephone attachment. A. C. Hewitt et al Velephone-meter and circuit connection of therefor. R. H. Manson Velephone-meter and circuit connection of therefor. R. H. Manson Velephone system. Intercommunicating. M. D. Currier Velephone system. Private-branch intercommunicating. J. L. McOuarrie Celephone-transmitters. O. M. Leich et al Velephone-transmitters. Covering for month-pieces of. A. K. Canne Cemerature-regulator. V. F. Davis Communicating. R. Coates Chill-support. F. B. Williams Chill-counling. R. Coates Chill-support. F. B. Williams Chill-counling. R. Coates Chill-support. F. B. Williams Chill-support. F. B. Williams Chill-counling. R. Coates Chill-support. F. B. Williams Chill-counling. R. Coates Chill-counling. R. Coates Chill-counling. C. J. C. Banks Chill-counling Chill-counling. R. Coates Chill-counling Chill-counlin	ultragest Adjustable A Wilshim
Cable W. Pelishek W. Pelishek Coeth. Anparatus for making backings for artificial F. S. Sawaya V. Pelephone and the like 4 pats F. S. Sawaya V. Pelephone and the like 4 pats F. S. Sawaya V. Pelephone attachment A. C. Hewitt et al V. Pelephone attachment A. C. Hewitt et al V. Pelephone-drop F. R. H. Manson V. Pelephone-meter and eircuit connection V. Pelephone-meter and eircuit connection V. Pelephone system. Intercommunicating F. H. D. Currier Pelephone system. Private-branch intercommunicating J. L. McOuarrie Pelephone-transmitter O. M. Leich et al Pelephone-transmitters, Covering for month-pieces of A. K. Canne Pemperature-regulator V. F. Davis Perminal casing H. L. Wallau et al Phill-counling R. Coates Phill-sunport F. R. Williams G. Phill-sunport F. R. Williams G. Phill-sunport F. R. Williams G. Phill-captale and rail-brace V. G. Banks Price-plate and rail-brace V. G. Banks Price-inflater W. R. Heck Price-infla	nky-seat. Admistable A. Wilshire upoorting-post B. E. Rudd uble W. Pelishek
Celephone apparatus. G. Babcock Celephone attachment. A. C. Hewitt et al Celephone-drop. A. H. Weiss Celephone-meter and eircuit connection Celephone-reneater. C. Adams-Randall Celephone system. Intercommunicating. H. D. Currier Celephone system. Private-branch inter- communicating. J. L. McOuarrie Celephone-transmitter. O. M. Leich et al Celephone-transmitters. Covering for month- pieces of. A. K. Cann Cemperature-regulator. V. F. Davis Cerminal casing. H. L. Wallau et al Chill-counling. R. Coates Chill-support. F. B. Williams Chumb-sucking preventer. A. B. Crandall Cie-plate and rail-brace. V. G. Banks Cin-plate-catching machine. G. J. Szabo Circ. Demountable. V. Wildner Circ. Demountable. V. Wildner Circ. Sectional wheel. J. C. Lighthouse Coggle. H. H. Cummings Collet and dressing table. G. M. Itterback Congue. Antomatic. F. N. Lauterbur Cool and tool-holder. A. K. Rosenbeck Cool-holding block. J. C. Buckley Cool, Honsehold. J. C. Forster Cool, Honsehold. J. C. Forster Cool, Honsehold. J. C. Forster Cool-holding block. J. C. Buckley Cool, Honsehold. J. C. Johnson Corpedo-director. G. C. Davison Concel-sterilizer. J. P. Reardon Crace-sunporter. G. D. Holm Crace-sunporter. G. D. Holm Crace-sunporter. J. F. Hudson Crace-sunporter. J. F. Hudson Crace-sunporter. J. F. Hudson Crace-sunporter. G. C. E. Gierding Crace-sunporter. G. C. E. Gierding Crace-sunporter. W. C. Starkey Crouley-base. C. E. Gierding Cr	uble
Celephone apparatus. G. Babcock Celephone attachment. A. C. Hewitt et al Celephone-drop. A. H. Weiss Celephone-meter and eircuit connection Celephone-reneater. C. Adams-Randall Celephone system. Intercommunicating. H. D. Currier Celephone system. Private-branch inter- communicating. J. L. McOuarrie Celephone-transmitter. O. M. Leich et al Celephone-transmitters. Covering for month- pieces of. A. K. Cann Cemperature-regulator. V. F. Davis Cerminal casing. H. L. Wallau et al Chill-counling. R. Coates Chill-support. F. B. Williams Chumb-sucking preventer. A. B. Crandall Cie-plate and rail-brace. V. G. Banks Cin-plate-catching machine. G. J. Szabo Circ. Demountable. V. Wildner Circ. Demountable. V. Wildner Circ. Sectional wheel. J. C. Lighthouse Coggle. H. H. Cummings Collet and dressing table. G. M. Itterback Congue. Antomatic. F. N. Lauterbur Cool and tool-holder. A. K. Rosenbeck Cool-holding block. J. C. Buckley Cool, Honsehold. J. C. Forster Cool, Honsehold. J. C. Forster Cool, Honsehold. J. C. Forster Cool-holding block. J. C. Buckley Cool, Honsehold. J. C. Johnson Corpedo-director. G. C. Davison Concel-sterilizer. J. P. Reardon Crace-sunporter. G. D. Holm Crace-sunporter. G. D. Holm Crace-sunporter. J. F. Hudson Crace-sunporter. J. F. Hudson Crace-sunporter. J. F. Hudson Crace-sunporter. G. C. E. Gierding Crace-sunporter. G. C. E. Gierding Crace-sunporter. W. C. Starkey Crouley-base. C. E. Gierding Cr	eth. Apparatus for making backings for
Celephone apparatus. G. Babcock Celephone attachment. A. C. Hewitt et al Celephone-drop. A. H. Weiss Celephone-meter and eircuit connection Celephone-reneater. C. Adams-Randall Celephone system. Intercommunicating. H. D. Currier Celephone system. Private-branch inter- communicating. J. L. McOuarrie Celephone-transmitter. O. M. Leich et al Celephone-transmitters. Covering for month- pieces of. A. K. Cann Cemperature-regulator. V. F. Davis Cerminal casing. H. L. Wallau et al Chill-counling. R. Coates Chill-support. F. B. Williams Chumb-sucking preventer. A. B. Crandall Cie-plate and rail-brace. V. G. Banks Cin-plate-catching machine. G. J. Szabo Circ. Demountable. V. Wildner Circ. Demountable. V. Wildner Circ. Sectional wheel. J. C. Lighthouse Coggle. H. H. Cummings Collet and dressing table. G. M. Itterback Congue. Antomatic. F. N. Lauterbur Cool and tool-holder. A. K. Rosenbeck Cool-holding block. J. C. Buckley Cool, Honsehold. J. C. Forster Cool, Honsehold. J. C. Forster Cool, Honsehold. J. C. Forster Cool-holding block. J. C. Buckley Cool, Honsehold. J. C. Johnson Corpedo-director. G. C. Davison Concel-sterilizer. J. P. Reardon Crace-sunporter. G. D. Holm Crace-sunporter. G. D. Holm Crace-sunporter. J. F. Hudson Crace-sunporter. J. F. Hudson Crace-sunporter. J. F. Hudson Crace-sunporter. G. C. E. Gierding Crace-sunporter. G. C. E. Gierding Crace-sunporter. W. C. Starkey Crouley-base. C. E. Gierding Cr	artificialF. S. Sawaya
therefor	B. Haskell
therefor	elephone attachmentA. C. Hewitt et al
relenhone system. Private-branch inter- communicating. J. L. McOuarrie relenhone-transmitter. O. M. Leich et al relenhone-transmitters. Covering for month- pieces of. A. K. Cann remerature-regulator. V. F. Davis reminal casing. H. L. Wallau et al rhill-counling. R. Coates rhill-support. F. B. Williams rhimb-sucking preventer. A. B. Crandall ric-plate and rail-brace. V. G. Banks rin-plate-catching machine. G. J. Szabo rice Demountable. V. Wildner rice protector. Pneumatic. E. Russell rice, Sectional wheel. J. C. Lighthouse rogle. H. H. Cummings roilet and dressing table. G. M. Utterback rongue. Antomatic. F. X. Lauterbur rool and tool-holder. A. K. Rosenbeck rool-bolding block. J. C. Buckley rool, Honsehold. J. C. Forster roch. C. Johnson romedo-director. G. C. Davison rowel-sterilizer. J. P. Reardon ransmitter for teleselectors. E. Blos rush receptacle and crematory. A. K. Rosenback rolley-base. C. E. Gierding rolley-base. C. E. Gierding rolley-retriever. W. C. Starkey rousers hanger and stretcher.	Plenhone-dropA. H. Weiss Plenhone-meter and eircuit connection
relenhone system. Private-branch inter- communicating. J. L. McOuarrie relenhone-transmitter. O. M. Leich et al relenhone-transmitters. Covering for month- pieces of. A. K. Cann remerature-regulator. V. F. Davis reminal casing. H. L. Wallau et al rhill-counling. R. Coates rhill-support. F. B. Williams rhimb-sucking preventer. A. B. Crandall ric-plate and rail-brace. V. G. Banks rin-plate-catching machine. G. J. Szabo rice Demountable. V. Wildner rice protector. Pneumatic. E. Russell rice, Sectional wheel. J. C. Lighthouse rogle. H. H. Cummings roilet and dressing table. G. M. Utterback rongue. Antomatic. F. X. Lauterbur rool and tool-holder. A. K. Rosenbeck rool-bolding block. J. C. Buckley rool, Honsehold. J. C. Forster roch. C. Johnson romedo-director. G. C. Davison rowel-sterilizer. J. P. Reardon ransmitter for teleselectors. E. Blos rush receptacle and crematory. A. K. Rosenback rolley-base. C. E. Gierding rolley-base. C. E. Gierding rolley-retriever. W. C. Starkey rousers hanger and stretcher.	thereforR. H. Manson Plephone-repeaterC. Adams-Randall
re-inflater	elephone system. Intercommunicating
re-inflater	elenhone system. Private-branch inter-
re-inflater	Plenhone-transmitterO. M. Leich et al
re-inflater	pieces ofA. K. Cann
re-inflater	emperature-regulatorV. F. Davis erminal casingH. L. Wallau et al
re-inflater	ill-couplingR. Coates
re-inflater	numb-sucking preventerA. B. Crandall
re-inflater	n-plate-catching machineG. J. Szabo
Cool. Household. J. C. Forster A cool throttle-handle. Pneumatic. W. M. Holden A coord-powder distributer. H. Hoelzer corch. C. Johnson A corpedo-director. G. C. Davison A cowel-sterilizer. J. P. Reardon race-supporter. G. D. Holm A crack-binder. J. F. Hudson ransmitter for teleselectors. E. Blos A crash receptacle and crematory. A crash receptacle and crematory. S. Karlson rolley-hase. C. E. Gierding A crolley-retriever. W. C. Starkey A cropsers hanger and stretcher.	re-inflaterW. R. Heck
Cool. Household. J. C. Forster A cool throttle-handle. Pneumatic. W. M. Holden A coord-powder distributer. H. Hoelzer corch. C. Johnson A corpedo-director. G. C. Davison A cowel-sterilizer. J. P. Reardon race-supporter. G. D. Holm A crack-binder. J. F. Hudson ransmitter for teleselectors. E. Blos A crash receptacle and crematory. A crash receptacle and crematory. S. Karlson rolley-hase. C. E. Gierding A crolley-retriever. W. C. Starkey A cropsers hanger and stretcher.	re protector. PneumaticE. Russell re. Sectional wheelJ. C. Lighthouse
Cool. Household. J. C. Forster A cool throttle-handle. Pneumatic. W. M. Holden A coord-powder distributer. H. Hoelzer corch. C. Johnson A corpedo-director. G. C. Davison A cowel-sterilizer. J. P. Reardon race-supporter. G. D. Holm A crack-binder. J. F. Hudson ransmitter for teleselectors. E. Blos A crash receptacle and crematory. A crash receptacle and crematory. A crolley-hase. C. E. Gierding A crolley-hase. C. E. Gierding A crolley-retriever. W. C. Starkey A crousers hanger and stretcher.	orgleH. H. Cummings
Cool. Household. J. C. Forster A cool throttle-handle. Pneumatic. W. M. Holden A coord-powder distributer. H. Hoelzer corch. C. Johnson A corpedo-director. G. C. Davison A cowel-sterilizer. J. P. Reardon race-supporter. G. D. Holm A crack-binder. J. F. Hudson ransmitter for teleselectors. E. Blos A crash receptacle and crematory. A crash receptacle and crematory. A crolley-hase. C. E. Gierding A crolley-hase. C. E. Gierding A crolley-retriever. W. C. Starkey A crousers hanger and stretcher.	ongue, AutomaticF. X. Lauterbur
cooth-powder distributer H. Hoelzer corch C. Johnson A. C. Johnson A. C. Davison A. C. Dav	ol-holding blockJ. C. Buckley
cooth-powder distributer H. Hoelzer corch C. Johnson A. C. Johnson A. C. Davison A. C. Dav	ool throttle-handle. Pnenmatic
orch	ooth-nowder distributer H. Hoelzer
race-supporter G. D. Holm A rack-binder J. F. Hudson ransmitter for teleselectors E. Blos A rush receptacle and crematory A S. Karlson rolley-base C. E. Gierding A rolley-retriever W. C. Starkey A rousers hanger and stretcher	rchC. Johnson a
ransmitter for teleselectorsE. Blos A rash receptacle and crematoryAS. Karlson rolley-haseC. E. Gierding A rolley-retrieverW. C. Starkey A rousers hanger and stretcher	wel-sterilizerJ. P. Reardon
ransmitter for teleselectorsE. Blos A rash receptacle and crematoryAS. Karlson rolley-haseC. E. Gierding A rolley-retrieverW. C. Starkey A rousers hanger and stretcher	ack-binderJ. F. Hudson
rolley-base	ansmitter for teleselectorsE. Blos assume and crematory
rousers hanger and stretcher A	olley-base
	Ousers hanger and stretcher
L. G. Hunter A	L. G. Hunter
ruck, HandF. E. Thomes A	nck, Locomotive trailerW. S. Hodges
rucks, Side-play liner for locomotive A	ucks, Side-play liner for locomotive W. H. Thoms et al
runk	unk
rnck, Hand	ace-supporter

Turbine-blades, Turbine, Elastic- Turbine, Gas Turbine, Re-entra Turbine, Steam.	ShroudingA.	W. Clarke A. London
Turbine, Gas Turbine, Re-entr	E. A. For	sberg et al
Turbine, Steam., Turpentine-cups,	Dipper for	.H. Peters F. Bailey
Type-writer, Boo Type-writing mad	k	V. Donning . T. Brown
Type-writing ma Type-writing mad	chineH.	H. Steele C. Holland
Type-writing mad Vacuum cleaning	chineH. apparatusW.	W. Morrett H. Jakway
Valve	J	F. Jennings 1. H. Owen
Turbine, Steam Turpentine-cups, Type-writer, Boo Type-writing ma Type-writing ma Type-writing ma Type-writing ma Vacuum cleaning Valve Valve Valve, Automatic Valve, Automatic Valve, Float-cont Yalve, Gas-produ	cut-offJ c safety gas	C. Smith
Valve, Float-cont	rolledW.	. Lake, Jr. S. Bellows
Valve-gear, Corli	iss	F. Phillips
Valve, Gas-produ Valve-gear, Corli Valve, Lubricatic Valve mechanism mission Valve, Priming cl	for controllin	g fluid ad- C Woodall
Valve, Priming cl Valve regulator,	heckJ. A. Fluid-pressnre	H. Provost
Valve, Relief or	safetyW.	M. Wilkins L. Osborne
Valve-spring removalve, Stop Valve, Stop and Valves, Device for of pressure-reduced to the control of the	through-way	.T. Pollock
Valves. Device for	or preventing t	W. Leevers he ignition
Vaporizing device	eA. A.	Low et al
of pressire-redu Vaporizing device Vault. Grave Vehicle-body Vehicle-heater Vehicle-rim. Deta Vehicle-rim. Deta Vehicle-wheel	D. J.	Kerstetter Johnston
Vehicle-rim Vehicle-rim. Deta	chableM. I	. Williams
Vehicle steering of Vehicle-wheel	levice	A. D. Baker .H. Scullin
Vehicle-wheel Vehicles by com apparatus for	npressed air. S propelling	ystem and J. O. Cobb
Velocipede prope	lling mechanism	n Г. Plummer
Velocipede prope Vending-machine Vending-machine		Kriz et al
77 71 1 1		t. t. RIWSOII
Vending machine	e, Stamp E. A. N	ielsen et al
Vending machine Ventilating appar Ventilator. Voting-machine i Wagon. Warbing-machine Washing-machine	ratusMR. W. interlocking me	I. Shapiro Carrington chanism
Wagon		Ellsworth
Washing-machine Washing-machine	F.	H. Wiard
Washing-machine Water-level regul	latorJ.	C. Forster
Warbing-machine Washing-machine Washing-machine Washing-machine Water-level regul Water tank, Vac Watering-trough, Waye-motor,	uum-wall hot G. C. H.	McPheeters
Watering-trough. Wave-motor		C. Michael J. L. Raht
Wave-motor Wave-motor Weeding-machine Weeds. Destroyin). Harmon H. H. Goe
Weeds, Destroyin Weight, Dress	12E	V. Hoskins J. Brooks
Weight, Dress Wheel2 pats Wheel and tire Wheel rim, Vehic		Lighthouse Lighthouse
Wheel rim, Vehice,	SafetyI. R.	Gammeter E. Hawkins
Window	F _.	C. Franks Baechlin
Window-opener.	Automatic. A.	A. Monson
Wheel rim. Vehic Winding device, Window. Window. Window-oneuer. Window-pane fas Window-press. Wine-press.		. Petersen
Wine-press Wire-stretcher Wire with yarn for covering or Wool-washing-ma	or its equivaler	H. Hannah
for covering or Wool-washing-ma	insulating chine carrier	D. Noble
Wrench	F.	G. Sargent G. Keller
Wrench	A. and B.	W. Fresko C. Greggs
Yellow lake Yellow lake. New		Meckbach Meckbach
Wrench. Wrench. Wrench. Vellow lake Yellow lake. New Yoke-attaching de	evice. Wagon-to ····F. (ongne G. Mitchell
I	DESIGNS.	
Doily		A. Efflott R. Gair P. Mouton
Fabric, Textile Glass goblet or	similar article	E. Sins
Picture-frame	C. O. G. I. S	Northwood ilbert et al
Carnet. Doily. Fabric. Textile. Fabric. Textile. Glass goblet or Picture-frame. Rug. Stamp. Wagon-body.		A. Spring Nenwohner D. Boyle

Yagon-body.....D. Boyle Issued September 20, 1910.

MECHANICAL PATENTS.

MECHANICAL PATENTS.

Abdominal and pelvic supporter.

E. F. Small
Abrading-block and carrier therefor.

R. Gardner
Abrading-wheel.

R. Gardner
Abrading-wheels, Tool for truing.

O. H. Collmer
Acid derivatives containing a phenyl group.
Oleic.

N. Sulzberger
Aerial navigation.

R. P. Marable
Aeriform environments, Producing pure or
mixed.

H. J. R. Hemming
Agricultural implement.

H. H. Boenker
Air and gas mixing device.

S. H. Hale
Air-compressor.

J. W. Gardner
Airship.

W. E. Morrison
Alarms or other devices, Apparatos for operating.

G. J. Rockwood
Amalgamator.

J. H. McNeil
Ammonia, Obtaining.

M. Caro
Ammonium chlorid, Making.

F. A. Freeth et al
Amusement apparatus.

T. F. Gilbride

Cart. Concrete. C. A. Baker Cartridge-belt. 2 pats. W. C. Fisher Castor derive for table for Tor Reference
Animal-shelter. C. J. Bears D. Antertapp. C. R. Miller J. Atomizer. M. von Trantmann D. Autographic registers and type-welters, J. Menns for combining. L. J. Earker D. Menns for combining and coding. L. J. C. R. Miller D. Miller D. M. L. Leistler D. Miller D. Miller D. M. L. C. P. Sester D. Earken d. J. K. J. Miller D. M. Miller D. M. H. M. H. J. D. J. D. Banking with quick heating and coding. L. C. R. Hulbs D. Bed. Safe or davennort. J. E. M. Hulbs D. Bed. Finger, Mechanical. G. J. Gollman D. Blanks, Machine for makin A. F. T. Martwell E. Bobbin-boring machine. L. C. R. Endwin E. Books, Making invoice and Serpa. D. E. C. Books, Making invoice and Serpa. D. E. M. Morsh Bucket-cutting-machine. J. W. Peters et al. Earker D. J. C. M. H. Marsh Bucket-cutting-machine. J. W. Peters et al. Earker D. J. M. Marsh Bucket-cutting-machines, Milling attrachment for making attrachment for makin
Antonizer. M. von Frantmann Autographic registers and type-writers, produced and the Mitographic foliation of the Mitographic foliation
Antonizer. M. von Frantmann Autographic registers and type-writers, produced and the Mitographic foliation of the Mitographic foliation
Menns for combining. E. J. Banker Pattomatic time-switch. H. C. Calvin D. Menns for combining. E. J. Banker Pattomatic time-switch. H. C. Calvin D. Menns for combining. E. J. Banker Pattomatic time-switch. H. C. Calvin D. Menns for combining. E. J. Banker Pattomatic time-switch. H. C. Calvin D. Menns for combining to the like. Learner D. C. P. Sester Balking with quick heating and cooling. E. Banker Mennical C. P. Sester Balking with quick heating and cooling. E. Banker Mennical G. J. Gollmar Banker Mennical. G. J. Gollmar Binder, Loose-leaf. B. S. Hubbard D. Bell-tringer, Mechanical. G. J. Gollmar Binder, Loose-leaf. B. S. Hubbard D. Binder-posts, Attachment means for combined by the combined of the combined by the combined
Means for combining. E. J. Barker Automatic time-switch. H. C. Calvin D. Automatic live deep documental live deep deep documental live deep deep documental live deep documental live deep deep deep deep deep deep deep de
Automatic time-switch
Antomatically-locking lock for doors and the like Me
Bed. Sofa or davenport. E. M. Billes
Bed. Sofa or davenport. E. M. Billes
Bed. Sofa or davenport. E. M. Billes
Bed. Sofa or davenport. E. M. Billes
Bed. Sofa or davenport. E. M. Billes
Bed. Sofa or davenport. E. M. Billes
Bed. Sofa or davenport. E. M. Billes
Bed. Sofa or davenport. E. M. Billes
Beer-dispensing apparatus. A. B. Jones Bell-ringer, Mechanical. G. J. Gollman Binder, Loose-leaf. B. S. Hubbard Binder-posts, Attachment means for
Beer-dispensing apparatus. A. B. Jones Bell-ringer, Mechanical. G. J. Gollman Binder, Loose-leaf. B. S. Hubbard Binder-posts, Attachment means for
Binder, Loose-leaf B. S. Hubbard Dinder-posts Attachment means for Diamks, Machine for making skived E. Doblin-horing machine L. L. Hartwell E. Doblin-horing machine L. L. Hartwell E. Doblin-horing machine C. W. Graham E. Doblin-holder for spinning-spinder E. Doskrit E. Dosk Making invoice and scrap. E. Dosk Making invoice and scrap. E. Doskrit
Binder, Loose-leaf B. S. Hubbard Dinder-posts Attachment means for Diamks, Machine for making skived E. Doblin-horing machine L. L. Hartwell E. Doblin-horing machine L. L. Hartwell E. Doblin-horing machine C. W. Graham E. Doblin-holder for spinning-spinder E. Doskrit E. Dosk Making invoice and scrap. E. Dosk Making invoice and scrap. E. Doskrit
Blanks, Machine for making skived Bobbin-boring machine. L. C. Baldwin Bobbin-boring machine. L. C. Baldwin Bobbin-boring machine. L. C. Baldwin Bobbin-boring machine. S. C. W. Graham Books and panaphlet. Hinstratics Books, Fitting for loose-leaf, A. T. Warne Books, Fitting for loose-leaf, A. T. Warne Books, Making invoice and scrap. W. G. Butler Bortle-washing machine. W. Seidel Bottle-washing machine. W. Seidel Bottle-washing machine. W. Seidel Bottle-washing machine. W. Seidel Bottle-washing machine. W. H. Mutchett Box-closure. H. Matchett Box-closure. H. Matchett Box-astener. W. H. Mutphy Brake. W. H. Mutphy Brake. W. H. Mutphy Brown. J. K. McQuin Burclar-alarm. C. H. Smith Calinet. Kitchen. J. S. McQuin Calinet. Kitchen. J. S. McQuin Calinet. Kitchen. J. S. McQuin Calinets, &c. Flexible closure for Calinet. Kitchen. J. S. McQuin Calinets, &c. Flexible closure for Calinet. Kitchen. J. S. McQuin Calinets, w. H. Mones et al Calipers. W. H. Harris Canipers. W. H. Harris Canipers. W. H. Mones et al Calipers. W. Kitchen. J. S. McQuin Calipers. W. H. Mones Calipers. W. H. Mones Calipers. W. H. Mones Calipers. W. H. Mones Canneaphine machine. C. W. Graham Canneaphine machine. J. W. Graham Canneaphine machine. C. W. Graham Cantestine machine. C. W. Graham Canneaphine machine. C. W. C. Fisher Cash-registe. C. J. R. Law Canneaphine machine. C. C. R. Baker Canneaphine machine. C. C. R. Baker Canneaphine machine. C. C. R. Baker Canneaphine machine. C. C. W. Wond Claren-chest. M. L. Poulite
Blanks, Machine for making skived Bobbin-boring machine. L. C. Baldwin Bobbin-boring machine. L. C. Baldwin Bobbin-boring machine. L. C. Baldwin Bobbin-boring machine. S. C. W. Graham Books and panaphlet. Hinstratics Books, Fitting for loose-leaf, A. T. Warne Books, Fitting for loose-leaf, A. T. Warne Books, Making invoice and scrap. W. G. Butler Bortle-washing machine. W. Seidel Bottle-washing machine. W. Seidel Bottle-washing machine. W. Seidel Bottle-washing machine. W. Seidel Bottle-washing machine. W. H. Mutchett Box-closure. H. Matchett Box-closure. H. Matchett Box-astener. W. H. Mutphy Brake. W. H. Mutphy Brake. W. H. Mutphy Brown. J. K. McQuin Burclar-alarm. C. H. Smith Calinet. Kitchen. J. S. McQuin Calinet. Kitchen. J. S. McQuin Calinet. Kitchen. J. S. McQuin Calinets, &c. Flexible closure for Calinet. Kitchen. J. S. McQuin Calinets, &c. Flexible closure for Calinet. Kitchen. J. S. McQuin Calinets, w. H. Mones et al Calipers. W. H. Harris Canipers. W. H. Harris Canipers. W. H. Mones et al Calipers. W. Kitchen. J. S. McQuin Calipers. W. H. Mones Calipers. W. H. Mones Calipers. W. H. Mones Calipers. W. H. Mones Canneaphine machine. C. W. Graham Canneaphine machine. J. W. Graham Canneaphine machine. C. W. Graham Cantestine machine. C. W. Graham Canneaphine machine. C. W. C. Fisher Cash-registe. C. J. R. Law Canneaphine machine. C. C. R. Baker Canneaphine machine. C. C. R. Baker Canneaphine machine. C. C. R. Baker Canneaphine machine. C. C. W. Wond Claren-chest. M. L. Poulite
Blanks, Machine for making skived Bobbin-boring machine. L. C. Baldwin Bobbin-boring machine. L. C. Baldwin Bobbin-boring machine. L. C. Baldwin Bobbin-boring machine. S. C. W. Graham Books and panaphlet. Hinstratics Books, Fitting for loose-leaf, A. T. Warne Books, Fitting for loose-leaf, A. T. Warne Books, Making invoice and scrap. W. G. Butler Bortle-washing machine. W. Seidel Bottle-washing machine. W. Seidel Bottle-washing machine. W. Seidel Bottle-washing machine. W. Seidel Bottle-washing machine. W. H. Mutchett Box-closure. H. Matchett Box-closure. H. Matchett Box-astener. W. H. Mutphy Brake. W. H. Mutphy Brake. W. H. Mutphy Brown. J. K. McQuin Burclar-alarm. C. H. Smith Calinet. Kitchen. J. S. McQuin Calinet. Kitchen. J. S. McQuin Calinet. Kitchen. J. S. McQuin Calinets, &c. Flexible closure for Calinet. Kitchen. J. S. McQuin Calinets, &c. Flexible closure for Calinet. Kitchen. J. S. McQuin Calinets, w. H. Mones et al Calipers. W. H. Harris Canipers. W. H. Harris Canipers. W. H. Mones et al Calipers. W. Kitchen. J. S. McQuin Calipers. W. H. Mones Calipers. W. H. Mones Calipers. W. H. Mones Calipers. W. H. Mones Canneaphine machine. C. W. Graham Canneaphine machine. J. W. Graham Canneaphine machine. C. W. Graham Cantestine machine. C. W. Graham Canneaphine machine. C. W. C. Fisher Cash-registe. C. J. R. Law Canneaphine machine. C. C. R. Baker Canneaphine machine. C. C. R. Baker Canneaphine machine. C. C. R. Baker Canneaphine machine. C. C. W. Wond Claren-chest. M. L. Poulite
Bobbin-boring machine. L. C. Baldwin E Bobbin-bolder for spinning-spindles. Book and pamphlet [Instrated.
Bobbin-boting machine C. Baldwin Ebobbin-bolder for spinning-spindles
Bobbin-holder for spinning-spindles F. Oskrit Body-forming machine. C. W. Graham Ebook and pamphlet. Distracted. Ebook and pamphlet. Elisaboth and pamphlet.
Body-forming machine. C. W. Graham E Book and pamphlet. Illustrated E Books. And and pamphlet. Illustrated E Books. Making invoice and Sea Dutier E Books. Making invoice and Sea Dutier E Bartile-washing machine. W. Seidel E Battle-washing machine. W. Seidel E Battle-washing machine. W. Seidel E Bottle. Water. Battle-washing machine. W. Seidel E Bottle. Water. H. Matchett E Box-closure. H. Matchett E Box-fastener. W. H. Murphy Brake. E. A. Nelson E Brown. Briquet-machine. J. W. Feters et al Broom. Briquet-machine. J. W. Feters et al Broom. H. M. Marsh Bucket-cutting-machines. Milling attachment for. J. Riddell Burglar-alarm. W. H. Cook Burglar-alarm. W. H. Cook Burglar-alarm. W. H. Cook Burglar-alarm. W. H. Cook Burglar-alarm. W. H. Gook Burglar-alarm. W. H. Cook Burglar-alarm. C. C. W. Graham Can-on permaner. W. Odmist et al Calinets. &c., Flexible closure for. Calinets. &c., Flexible closure for. Can-on permaner. W. Odmist et al Calinets. &c., Flexible closure for. Can-on permaner. W. Odmist et al Can-on permaner. W. J. Erickson E Gar-door, Freight. F. L. Lanc Car-door hanger. J. F. Ryan Car-oupling mechanism. O. Anderson From Strip and truss-rod support for. J. Frickson F. Carstridez-belt. 2 parts. W. W. Teriff Carstrodez-belt. 2
Body-forming machine. C. W. Graham E Book and pamphlet. Illustrated E Books. And and pamphlet. Illustrated E Books. Making invoice and Sea Dutier E Books. Making invoice and Sea Dutier E Bartile-washing machine. W. Seidel E Battle-washing machine. W. Seidel E Battle-washing machine. W. Seidel E Bottle. Water. Battle-washing machine. W. Seidel E Bottle. Water. H. Matchett E Box-closure. H. Matchett E Box-fastener. W. H. Murphy Brake. E. A. Nelson E Brown. Briquet-machine. J. W. Feters et al Broom. Briquet-machine. J. W. Feters et al Broom. H. M. Marsh Bucket-cutting-machines. Milling attachment for. J. Riddell Burglar-alarm. W. H. Cook Burglar-alarm. W. H. Cook Burglar-alarm. W. H. Cook Burglar-alarm. W. H. Cook Burglar-alarm. W. H. Gook Burglar-alarm. W. H. Cook Burglar-alarm. C. C. W. Graham Can-on permaner. W. Odmist et al Calinets. &c., Flexible closure for. Calinets. &c., Flexible closure for. Can-on permaner. W. Odmist et al Calinets. &c., Flexible closure for. Can-on permaner. W. Odmist et al Can-on permaner. W. J. Erickson E Gar-door, Freight. F. L. Lanc Car-door hanger. J. F. Ryan Car-oupling mechanism. O. Anderson From Strip and truss-rod support for. J. Frickson F. Carstridez-belt. 2 parts. W. W. Teriff Carstrodez-belt. 2
Book and pamphlet. C. W. Graham Books And pamphlet. Illustrated. Books. Fitting for loose-leaf. A. T. Warne Books. Fitting for loose-leaf. A. T. Warne Books. Fitting for loose-leaf. A. T. Warne Books. Making invoice and scran. W. G. Rutler Bottle and Jar closure. P. J. O'Brien Bottle water. W. G. Rutler Bottle and Jar closure. P. J. O'Brien Bottle Water. A. L. Swingle Bostlesweining machine. W. Sciele Bottle Water. A. L. Swingle Bostlesweine. H. Matchel Bottle Water. A. L. Swingle Bostlesweine. H. Matchel Bottle Water. A. L. Swingle Box-closure. H. Matchel Box-losure. H. Matchel Branch M. H. Marsh Bucket-cutting-machines. Milling attach- ment for. W. H. Marsh Bucket-cutting-machines. Milling attach- ment for. W. H. Shidt Calinet. Kitchen J. J. S. McQuin Calinets. &c. Flexible closure for. T. M. Jones et al Calipers. W. H. Harris Cameras, Winding-key for. C. W. Graham Can-cap hemmer. V. Odqnist et al Calipers. W. H. Harris Cameras, Winding-key for. C. W. Graham Can-cap-making apparatus. C. W. Graham Can-cap-making machine marking attachment. Car-coupling. F. C. Reynolds Car-coupling. F. C. Reynolds Car-door closure. A. Fageet Car door, Freicht. F. L. Lane Cart-door hanger. J. P. Chan Carbureter for gas-engines. L. C. Gerben Cart. Concrete. A. F. Expan Carbureter for gas-engines. L. C. Gerben Cart. Concrete. J. P. Chan Carbureter for gas-engines. L. C. Gerben Cart. Concrete. J. P. Chan Carbureter for gas-engines. L. C. Gerben Cart. Concrete. J. P. Chan Carbureter for gas-engines. L. C. Gerben Cart. Concrete. J. P. Chan Carbureter for gas-engines. L. C. Gerben Cart. Concrete. J. J. P. Cleaf Carbureter for gas-engines. L. C. Gerben Cart. Concrete. J. C. A. Baker Cart. Goorete. J. K. Liux F. Casting under pressure small metal pieces. Annaratis for. L. P. Wish Cart. Concrete. J. C. A. Baker Cart. Concrete. J. C. A. Baker Cart. Concrete. J. C. A. C. A. C. A. Casting under pressure small metal pieces. Annaratis for. L. P. Wi
Book and pamphlet, Illustrated. Books, Fitting for loose-left A. T. Warne Books, Fitting for loose-left A. T. Warne Books, Making invoice and scrap. Bottle and jar closure. P. J. O'Brien Bottle and jar closure. P. J. O'Brien Bottle-washing machine . W. Seidel Bottle-washing machine . W. Seidel Bottle-washing machine . W. Seidel Bottle-washing machine . W. H. Murphy Brake . E. A. Nolson Briquer-machine H. M. Marsh Broom . H. M. Marsh Briquer-machine. Milling attach Burclar-alarm . C. H. Smith Cabinets, &c. Flexible closure for. T. M. Jones et al Calipers W. H. Hurris Cameras, Winding-key for . C. Bornmann Can-cap hemmer . V. Odquist et al Calimers, Winding-key for . C. Bornmann Can-cap hemmer . V. Odquist et al Can-making apparatus . C. W. Graham Can-cap hemmer . V. Odquist et al Can-making apparatus . C. W. Graham Can-cap hemmer . V. Odquist et al Car-coupling . F. C. Reynold Car-coupling . F. C. Reynold Car-door closure . A. Fazet Car door, Freicht . F. L. Lane Car-door hauger . L. S. Pratt Car-feder . A. Fazet Car door, Freicht . F. L. Lane Car-door hauger . L. S. Pratt Car-feder . Destreasion and truss red sunport for . J. Erickson Carbineter for gas-enzines . L. C. Gerken Cart. Concrete . C. A. Baser Cart. Concrete . G. L. Resenfeld Chemical compound . A. Eklund Chuck, Planer . W. Honschold Chuck, Planer . W. Honschold Churn . J. T. Anthony Chinra . J. F. Anthony Chinra . L. F. C. C. See Casting and films of the same Cart. Concrete . G. C. Remens et al Casting machine . G. I. Resenfeld Chemical compound . A. Eklund Chuck, Planer . W. Honschold Cieaning device . P. Dunning Cicar-chest . G. R. Respenfeld Chemical compound . A. Eklund Chuck Planer . W. Honschold Cicar cutter and lighter . W. A. McAnen Cicar cutter and lighter . W. A. McAnen Cicar cutter and lighter . W. A. McAnen Cicar cut
Books, Fitting for loose-leaf. A. T. Warm E Books, Making invoice and seran. W. G. Ratler Bottle and jar closure. P. J. O'Brien Bottle-washing machine. W. Sciel Box-closure. H. Matchet Box-fastener. W. H. Murphy Brake. E. A. Nelson Briquet-machine. J. W. Deters et al Broom. Briquet-machine. J. W. Deters et al Broom. Briquet-machine. J. W. H. Cook Burglar-alarum. W. H. Cook Burglar-alarum. W. H. Cook Burglar-alarum. W. H. Cook Burglar-alarum. W. W. H. Cook Burglar-alarum. C. W. Graham Can-ocap hemmer. W. Odquist et al Caliners. Winding-key for . G. Bornmann Can-ocap hemmer. W. Odquist et al Can-machine marking attachment. Can-ocaphing. F. C. Reynolds Car-door closure. F. C. Reynolds Car-door closure. F. C. Reynolds Car-door hanger. J. E. Kranet Car-door, Freight. F. L. Lane Car-endeling. C. W. Graham Cars. Sill-protector, bolster-stop and truss- red support for . J. Erickson Carbureter for gas-engines. L. C. Gerber Cart-door hanger. J. P. Rvan Carbureter for gas-engines. L. C. Gerber Cart-door hanger. J. P. Rvan Carbureter for gas-engines. L. C. Gerber Cart-door hanger. J. P. Rvan Carbureter for gas-engines. L. C. Gerber Cart-door hanger. J. P. Rvan Carbureter for gas-engines. L. C. Gerber Cart-door hanger. J. P. Rvan Carbureter for gas-engines. L. C. Gerber Cart-door hanger. J. P. Rvan Carbureter for gas-engines. L. C. Gerber Cart-door hanger. J. R. Honkins F. C. Sting under pressure small metal pices. F Carthed-belt. 2 pats W. W. Teriff Casting under pressure small metal pices. F Casting and product of trends. F Casting and product of trends. F Casting and product of trends. F Casting and product of tre
Books, Making invoice and scrap. Bottle and jar closure. W. G. Battler Bottle and jar closure. P. J. O'Brien Bottle-washing machine. W. Seidel Bottle-washing machine. W. Seidel Bottle-washing machine. W. Seidel Bottle-washing machine. W. Seidel Box-closure. H. M. Marphy Brake. E. A. Neson Briquet-machine. J. W. H. Murphy Brake. E. A. Neson Briquet-machine. J. W. Feters et al Broom. M. H. M. Marsh Bucket-cutting-machines, Milling attachment for. R. Riddel Burglar-alarm. W. H. Cook Burglar-alarm. W. H. Cook Burglar-alarm. W. H. Cook Burglar-alarm. W. W. H. Cook Burglar-alarm. W. W. H. Cook Burglar-alarm. W. W. H. Cook Burglar-alarm. C. H. Smith Calinets, &c. Flexible closure for. Calinets, &c. Flexible clo
Books, Making invoice and scrap. Bottle and jar closure. W. G. Battler Bottle and jar closure. P. J. O'Brien Bottle-washing machine. W. Seidel Bottle-washing machine. W. Seidel Bottle-washing machine. W. Seidel Bottle-washing machine. W. Seidel Box-closure. H. M. Marphy Brake. E. A. Neson Briquet-machine. J. W. H. Murphy Brake. E. A. Neson Briquet-machine. J. W. Feters et al Broom. M. H. M. Marsh Bucket-cutting-machines, Milling attachment for. R. Riddel Burglar-alarm. W. H. Cook Burglar-alarm. W. H. Cook Burglar-alarm. W. H. Cook Burglar-alarm. W. W. H. Cook Burglar-alarm. W. W. H. Cook Burglar-alarm. W. W. H. Cook Burglar-alarm. C. H. Smith Calinets, &c. Flexible closure for. Calinets, &c. Flexible clo
Bottle and Jar closure
Bottle-washing machine
Bottle-washing machine
Box-closure. H. Matchett Box-fastener. W. H. Murphy Brake. E. A. Nelson Briquet-machine. J. W. Perers et al Broom. H. M. Marsh Bucket-cutting-machines. Milling attachment for J. R. Iddell Burglar-alarm. W. H. M. Marsh Bucket-cutting-machines. Milling attachment for J. R. Iddell Burglar-alarm. W. H. Cook Burglar-alarm. C. C. H. Smith Cabinets, &c. Flexible closure for T. M. Jones et al Calinets, &c. Flexible closure for T. M. Jones et al Calinets, &c. Flexible closure for T. M. Jones et al Calinets, &c. Flexible closure for C. H. Smith Calinets, &c. Flexible closure for T. M. Jones et al Calinets, Winding-key for C. Bornmann Can-bodies, Making C. W. Graham Can-cap hemmer. V. Odquist et al Can-making apparatus. C. W. Graham Can-cap hemmer. V. Odquist et al Can-making apparatus. C. W. Graham Can-cap hemmer. V. Odquist et al Can-making apparatus. C. W. Graham Can-cap hemmer. T. S. F. L. Lane Car-door closure. A. Fazet Car door, Freight. F. L. Lane Car-door hanger. L. S. Pratt Car-door hanger. L. S. Pratt Car-fender. G. Frey et al Car-necoupling mechanism. O. Anderson Cars. Sill-protector, holster-stop and truns- red support for J. Erickson Carbureter for gas-ensines. L. C. Gerken Cart. Concrete. C. A. Baser Cart. Concrete. C. A. Baser Cart. Concrete. S. L. C. Gerken Cart. Concrete. C. C. A. Baser Cart. Concrete. C. C. W. Koll Cash. C. C. W. Koll C
Box-fastener. W. H. Muryb Brake. E. A. Nelson Briquet-machine. J. W. Peters et al Broom. H. M. Marsb Bucket-cutting-machines. Milling attach- ment for. J. Riddell Burralar-alarm. W. H. Cook Burralar-alarm. C. H. Smith Cabinet. Kitchen. J. S. McQuint Cabinets. Kitchen. J. S. McQuint Cabinets. Kitchen. J. S. McQuint Cabinets. Kitchen. J. S. McQuint Calipers. W. H. Harris Cameras. Winding-key for. C. Bornman Can-bodies. Making. C. W. Graham Can-cap hemmer. V. Odquist et al Can-making apparatus. C. W. Graham Can-cap hemmer. V. Odquist et al Can-coupling. F. C. Reynolds Car-door Preight. F. L. Lane Car-door, Preight. F. L. Lane Carsender. G. Frey et al Car-moor hanger. J. P. Rvan Cars. Sill-protector, holster-stop and truss- red support for. J. Erickson Carbureter for gas-engines. L. C. Gevelen Cart. Concrete. C. A. Baker Caster device for tubs. &c. Leg-lifting. F. Casting under pressure small metal pices. F. Casting under pressure small pressure pres
ment form
Burelar-alarm
Burelar-alarm
Cailpers, W. H. Harris Cameras, Winding-key for, C. Bornmann Can-bodies, Making, C. W. Graham Can-cap hemmer, V. Odquist et al Can-making apparatus, C. W. Graham Can-testing machine, C. W. Graham Car-door closure, F. C. Reynolds Car-door closure, F. C. Reynolds Car-door refeight, F. L. Lanc Car-door closure, G. Frey et al Car-door closure, G. Frey et al Car-moorphing mechanism, O. Anderson Cars, Sill-profector, bolster-stop and truss- red support for, J. Frickson Carbureter for gas-engines, L. C. Gerken Carbureter for gas-engines, L. C. Gerken Carbureter for gas-engines, L. C. Gerken Cart-Concrete, C. A. Baker Caster device for tubs, &c. Leg-lifting, F. Casting under pressure small metal plecos, Annaratus for, B. Platschiek Cellulose, Manufacture of threads, filla- ments, strips and films of, L. P. Wilson Centering-machine, G. B. Brennelson Cellulose, Manufacture of threads, filla- ments, strips and films of, L. P. Wilson Centering-machine, G. B. Brennelson Chan attachment, Evoglass, E. R. Marters Change-making machine, J. R. Sahl Chemical compound, A. Ekhnad Churn, J. H. Honkins F. Cicar-chest, A. Sargent Cicar-chest, A. Machaeny Cicar-chest, A. Sargent Cicar-chest, A. C. K. K. Cicar-chest, A. C. K. Collaps, D. C. H. Keeln Cicar-chest, A. C. K. Cicar-chest,
Cailpers, W. H. Harris Cameras, Winding-key for, C. Bornmann Can-bodies, Making, C. W. Graham Can-cap hemmer, V. Odquist et al Can-making apparatus, C. W. Graham Can-testing machine, C. W. Graham Car-door closure, F. C. Reynolds Car-door closure, F. C. Reynolds Car-door refeight, F. L. Lanc Car-door closure, G. Frey et al Car-door closure, G. Frey et al Car-moorphing mechanism, O. Anderson Cars, Sill-profector, bolster-stop and truss- red support for, J. Frickson Carbureter for gas-engines, L. C. Gerken Carbureter for gas-engines, L. C. Gerken Carbureter for gas-engines, L. C. Gerken Cart-Concrete, C. A. Baker Caster device for tubs, &c. Leg-lifting, F. Casting under pressure small metal plecos, Annaratus for, B. Platschiek Cellulose, Manufacture of threads, filla- ments, strips and films of, L. P. Wilson Centering-machine, G. B. Brennelson Cellulose, Manufacture of threads, filla- ments, strips and films of, L. P. Wilson Centering-machine, G. B. Brennelson Chan attachment, Evoglass, E. R. Marters Change-making machine, J. R. Sahl Chemical compound, A. Ekhnad Churn, J. H. Honkins F. Cicar-chest, A. Sargent Cicar-chest, A. Machaeny Cicar-chest, A. Sargent Cicar-chest, A. C. K. K. Cicar-chest, A. C. K. Collaps, D. C. H. Keeln Cicar-chest, A. C. K. Cicar-chest,
Cailpers, W. H. Harris Cameras, Winding-key for, C. Bornmann Can-bodies, Making, C. W. Graham Can-cap hemmer, V. Odquist et al Can-making apparatus, C. W. Graham Can-testing machine, C. W. Graham Car-door closure, F. C. Reynolds Car-door closure, F. C. Reynolds Car-door refeight, F. L. Lanc Car-door closure, G. Frey et al Car-door closure, G. Frey et al Car-moorphing mechanism, O. Anderson Cars, Sill-profector, bolster-stop and truss- red support for, J. Frickson Carbureter for gas-engines, L. C. Gerken Carbureter for gas-engines, L. C. Gerken Carbureter for gas-engines, L. C. Gerken Cart-Concrete, C. A. Baker Caster device for tubs, &c. Leg-lifting, F. Casting under pressure small metal plecos, Annaratus for, B. Platschiek Cellulose, Manufacture of threads, filla- ments, strips and films of, L. P. Wilson Centering-machine, G. B. Brennelson Cellulose, Manufacture of threads, filla- ments, strips and films of, L. P. Wilson Centering-machine, G. B. Brennelson Chan attachment, Evoglass, E. R. Marters Change-making machine, J. R. Sahl Chemical compound, A. Ekhnad Churn, J. H. Honkins F. Cicar-chest, A. Sargent Cicar-chest, A. Machaeny Cicar-chest, A. Sargent Cicar-chest, A. C. K. K. Cicar-chest, A. C. K. Collaps, D. C. H. Keeln Cicar-chest, A. C. K. Cicar-chest,
Cailpers, W. H. Harris Cameras, Winding-key for, C. Bornmann Can-bodies, Making, C. W. Graham Can-cap hemmer, V. Odquist et al Can-making apparatus, C. W. Graham Can-testing machine, C. W. Graham Car-door closure, F. C. Reynolds Car-door closure, F. C. Reynolds Car-door refeight, F. L. Lanc Car-door closure, G. Frey et al Car-door closure, G. Frey et al Car-moorphing mechanism, O. Anderson Cars, Sill-profector, bolster-stop and truss- red support for, J. Frickson Carbureter for gas-engines, L. C. Gerken Carbureter for gas-engines, L. C. Gerken Carbureter for gas-engines, L. C. Gerken Cart-Concrete, C. A. Baker Caster device for tubs, &c. Leg-lifting, F. Casting under pressure small metal plecos, Annaratus for, B. Platschiek Cellulose, Manufacture of threads, filla- ments, strips and films of, L. P. Wilson Centering-machine, G. B. Brennelson Cellulose, Manufacture of threads, filla- ments, strips and films of, L. P. Wilson Centering-machine, G. B. Brennelson Chan attachment, Evoglass, E. R. Marters Change-making machine, J. R. Sahl Chemical compound, A. Ekhnad Churn, J. H. Honkins F. Cicar-chest, A. Sargent Cicar-chest, A. Machaeny Cicar-chest, A. Sargent Cicar-chest, A. C. K. K. Cicar-chest, A. C. K. Collaps, D. C. H. Keeln Cicar-chest, A. C. K. Cicar-chest,
Cameras, Winding-key for C. Bornmann Can-bodies, Making C. W. Graham Can-cap hemmer V. Odquist et al Can-making apparatus C. W. Graham E. Can-making apparatus C. W. Graham Can-ten hemmer V. Odquist et al Can-making apparatus C. W. Graham Can-tening machine Marking attachment C. C. Grace Gar-door closure Car-door closure Car-door hanger L. S. Pratte Car door, Freight F. L. Lanc Car-door hanger L. S. Pratte Car-door hanger C. S. Frey et al Car-mecopiling mechanism C. Anderson Cans. Sill-profector, bolster-stop and trussred support for J. Erickson Carbureter C. J. R. Raker Cartridge-helt 2 pats W. C. Fisher Cash-register J. P. Rvan Carbureter for gas-engines L. C. Gerken Cart. Concrete C. C. A. Baker Cartridge-helt 2 pats W. W. Terifft Casting under pressure small metal piccos, Annaratus for L. P. Wilson Centering-machine G. B. Pratschick F. Cellulose, Manufacture of threads, filaments, strips and films of L. P. Wilson Centering-machine L. Rosenfeld Chemical compound A. Eklund Chemical compound A. Eklund Chemical compound A. Eklund Chemical compound A. A. Exhund Chemical compound A. A. Exhund Chemical compound Clase C. H. K. Lux F. Charles Charles Controlling device P. Dunning Circuit-controlling are the machine P. C. H. Keehn Controller-landle P. C
Car-coupling G. G. J. Lange Car-door closure A. Faget Car door, Freight F. L. Lange Car-door closure A. F. L. Lange Car-door closure A. F. L. Lange Car-door hanger I. S. Fratt Car-fender G. G. Frey et al Car-ancoupling mechanism O. Anderson Cars. Sill-protector, holster-stop and truss- rod support for J. Erickson Carbureter G. J. F. Rvan Carbureter G. J. F. Cleal Cart. Concrete C. A. Baker Cartridge-belt. 2 pats W. C. Fisher Cash-registor J. J. C. Clear Cash-registor J. F. Cleal Caster device for tubs, &c. Leg-lifting F. Casting under pressure small metal pieces, Annaratus for B. Flatschick Cellulose, Manufacture of threads, fila- ments, strips and films of J. F. Wilson Centering-machine G. G. B. Brenneisan Chain attachment. Everlass. E. R. Matters Chaine-making machine J. Rosonfeld Chemical compound A. Eklund Chuck, Planer W. Honschied Churn J. T. Anthony Churn J. H. Honkins Cicar-chest A. Sargent Cicar cutter and lighter W. A. McAneny Circuit-controlling device P. Dunning Circuit-controlling device P. Dunning Circuit-controlling device P. Dunning Circuit-controlling mechanism Circuit-controlling mechanism Circuit-controlling mechanism Circuit-controlling mechanism Circuit-controlling mechanism Circuit-controlling device P. Dunning Circuit-controlling device P. Dunning Circuit-controlling device P. Dunning Circuit-controlling device P. Dunning Circuit-controlling device P. C. H. Stahl Clothes-pin A. H. Wiley et al Clothes-pin A. H. Wiley et al Clothes-pin A. H. Wiley et al Clothes-pin A. H. Wiley Collapsible box K. Smith Collapsible box K. Smith Collapsible box K. Smith Collapsible box K. Smith Collapsible box R. K. Smith Collapsible box R. K. Smith Collapsible box R. C. L. Taylor Conset Laminated transformer O. Wiemer Coyset Laminated transformer O. Wiemer Coyset Laminated transformer O. Wiemer Container-closure D. J. R. Harbock Concrete-mixing machine E. W. Thompson Cotton-batting and product of the same, Manufacturing E. W. Thom
Car-coupling G. G. J. Lange Car-door closure A. Faget Car door, Freight F. L. Lange Car-door closure A. F. L. Lange Car-door closure A. F. L. Lange Car-door hanger I. S. Fratt Car-fender G. G. Frey et al Car-ancoupling mechanism O. Anderson Cars. Sill-protector, holster-stop and truss- rod support for J. Erickson Carbureter G. J. F. Rvan Carbureter G. J. F. Cleal Cart. Concrete C. A. Baker Cartridge-belt. 2 pats W. C. Fisher Cash-registor J. J. C. Clear Cash-registor J. F. Cleal Caster device for tubs, &c. Leg-lifting F. Casting under pressure small metal pieces, Annaratus for B. Flatschick Cellulose, Manufacture of threads, fila- ments, strips and films of J. F. Wilson Centering-machine G. G. B. Brenneisan Chain attachment. Everlass. E. R. Matters Chaine-making machine J. Rosonfeld Chemical compound A. Eklund Chuck, Planer W. Honschied Churn J. T. Anthony Churn J. H. Honkins Cicar-chest A. Sargent Cicar cutter and lighter W. A. McAneny Circuit-controlling device P. Dunning Circuit-controlling device P. Dunning Circuit-controlling device P. Dunning Circuit-controlling mechanism Circuit-controlling mechanism Circuit-controlling mechanism Circuit-controlling mechanism Circuit-controlling mechanism Circuit-controlling device P. Dunning Circuit-controlling device P. Dunning Circuit-controlling device P. Dunning Circuit-controlling device P. Dunning Circuit-controlling device P. C. H. Stahl Clothes-pin A. H. Wiley et al Clothes-pin A. H. Wiley et al Clothes-pin A. H. Wiley et al Clothes-pin A. H. Wiley Collapsible box K. Smith Collapsible box K. Smith Collapsible box K. Smith Collapsible box K. Smith Collapsible box R. K. Smith Collapsible box R. K. Smith Collapsible box R. C. L. Taylor Conset Laminated transformer O. Wiemer Coyset Laminated transformer O. Wiemer Coyset Laminated transformer O. Wiemer Container-closure D. J. R. Harbock Concrete-mixing machine E. W. Thompson Cotton-batting and product of the same, Manufacturing E. W. Thom
Car-coupling G. G. J. Lange Car-door closure A. Faget Car door, Freight F. L. Lange Car-door closure A. F. L. Lange Car-door closure A. F. L. Lange Car-door hanger I. S. Fratt Car-fender G. G. Frey et al Car-ancoupling mechanism O. Anderson Cars. Sill-protector, holster-stop and truss- rod support for J. Erickson Carbureter G. J. F. Rvan Carbureter G. J. F. Cleal Cart. Concrete C. A. Baker Cartridge-belt. 2 pats W. C. Fisher Cash-registor J. J. C. Clear Cash-registor J. F. Cleal Caster device for tubs, &c. Leg-lifting F. Casting under pressure small metal pieces, Annaratus for B. Flatschick Cellulose, Manufacture of threads, fila- ments, strips and films of J. F. Wilson Centering-machine G. G. B. Brenneisan Chain attachment. Everlass. E. R. Matters Chaine-making machine J. Rosonfeld Chemical compound A. Eklund Chuck, Planer W. Honschied Churn J. T. Anthony Churn J. H. Honkins Cicar-chest A. Sargent Cicar cutter and lighter W. A. McAneny Circuit-controlling device P. Dunning Circuit-controlling device P. Dunning Circuit-controlling device P. Dunning Circuit-controlling mechanism Circuit-controlling mechanism Circuit-controlling mechanism Circuit-controlling mechanism Circuit-controlling mechanism Circuit-controlling device P. Dunning Circuit-controlling device P. Dunning Circuit-controlling device P. Dunning Circuit-controlling device P. Dunning Circuit-controlling device P. C. H. Stahl Clothes-pin A. H. Wiley et al Clothes-pin A. H. Wiley et al Clothes-pin A. H. Wiley et al Clothes-pin A. H. Wiley Collapsible box K. Smith Collapsible box K. Smith Collapsible box K. Smith Collapsible box K. Smith Collapsible box R. K. Smith Collapsible box R. K. Smith Collapsible box R. C. L. Taylor Conset Laminated transformer O. Wiemer Coyset Laminated transformer O. Wiemer Coyset Laminated transformer O. Wiemer Container-closure D. J. R. Harbock Concrete-mixing machine E. W. Thompson Cotton-batting and product of the same, Manufacturing E. W. Thom
Car-coupling G. G. J. Lange Car-door closure A. Faget Car door, Freight F. L. Lange Car-door closure A. F. L. Lange Car-door closure A. F. L. Lange Car-door hanger I. S. Fratt Car-fender G. G. Frey et al Car-ancoupling mechanism O. Anderson Cars. Sill-protector, holster-stop and truss- rod support for J. Erickson Carbureter G. J. F. Rvan Carbureter G. J. F. Cleal Cart. Concrete C. A. Baker Cartridge-belt. 2 pats W. C. Fisher Cash-registor J. J. C. Clear Cash-registor J. F. Cleal Caster device for tubs, &c. Leg-lifting F. Casting under pressure small metal pieces, Annaratus for B. Flatschick Cellulose, Manufacture of threads, fila- ments, strips and films of J. F. Wilson Centering-machine G. G. B. Brenneisan Chain attachment. Everlass. E. R. Matters Chaine-making machine J. Rosonfeld Chemical compound A. Eklund Chuck, Planer W. Honschied Churn J. T. Anthony Churn J. H. Honkins Cicar-chest A. Sargent Cicar cutter and lighter W. A. McAneny Circuit-controlling device P. Dunning Circuit-controlling device P. Dunning Circuit-controlling device P. Dunning Circuit-controlling mechanism Circuit-controlling mechanism Circuit-controlling mechanism Circuit-controlling mechanism Circuit-controlling mechanism Circuit-controlling device P. Dunning Circuit-controlling device P. Dunning Circuit-controlling device P. Dunning Circuit-controlling device P. Dunning Circuit-controlling device P. C. H. Stahl Clothes-pin A. H. Wiley et al Clothes-pin A. H. Wiley et al Clothes-pin A. H. Wiley et al Clothes-pin A. H. Wiley Collapsible box K. Smith Collapsible box K. Smith Collapsible box K. Smith Collapsible box K. Smith Collapsible box R. K. Smith Collapsible box R. K. Smith Collapsible box R. C. L. Taylor Conset Laminated transformer O. Wiemer Coyset Laminated transformer O. Wiemer Coyset Laminated transformer O. Wiemer Container-closure D. J. R. Harbock Concrete-mixing machine E. W. Thompson Cotton-batting and product of the same, Manufacturing E. W. Thom
Car-coupling G. G. J. Lange Car-door closure A. Faget Car door, Freight F. L. Lange Car-door closure A. F. L. Lange Car-door closure A. F. L. Lange Car-door hanger I. S. Fratt Car-fender G. G. Frey et al Car-ancoupling mechanism O. Anderson Cars. Sill-protector, holster-stop and truss- rod support for J. Erickson Carbureter G. J. F. Rvan Carbureter G. J. F. Cleal Cart. Concrete C. A. Baker Cartridge-belt. 2 pats W. C. Fisher Cash-registor J. J. C. Clear Cash-registor J. F. Cleal Caster device for tubs, &c. Leg-lifting F. Casting under pressure small metal pieces, Annaratus for B. Flatschick Cellulose, Manufacture of threads, fila- ments, strips and films of J. F. Wilson Centering-machine G. G. B. Brenneisan Chain attachment. Everlass. E. R. Matters Chaine-making machine J. Rosonfeld Chemical compound A. Eklund Chuck, Planer W. Honschied Churn J. T. Anthony Churn J. H. Honkins Cicar-chest A. Sargent Cicar cutter and lighter W. A. McAneny Circuit-controlling device P. Dunning Circuit-controlling device P. Dunning Circuit-controlling device P. Dunning Circuit-controlling mechanism Circuit-controlling mechanism Circuit-controlling mechanism Circuit-controlling mechanism Circuit-controlling mechanism Circuit-controlling device P. Dunning Circuit-controlling device P. Dunning Circuit-controlling device P. Dunning Circuit-controlling device P. Dunning Circuit-controlling device P. C. H. Stahl Clothes-pin A. H. Wiley et al Clothes-pin A. H. Wiley et al Clothes-pin A. H. Wiley et al Clothes-pin A. H. Wiley Collapsible box K. Smith Collapsible box K. Smith Collapsible box K. Smith Collapsible box K. Smith Collapsible box R. K. Smith Collapsible box R. K. Smith Collapsible box R. C. L. Taylor Conset Laminated transformer O. Wiemer Coyset Laminated transformer O. Wiemer Coyset Laminated transformer O. Wiemer Container-closure D. J. R. Harbock Concrete-mixing machine E. W. Thompson Cotton-batting and product of the same, Manufacturing E. W. Thom
Car-coupling G. G. J. Lange Car-door closure A. Faget Car door, Freight F. L. Lange Car-door closure A. F. L. Lange Car-door closure A. F. L. Lange Car-door hanger I. S. Fratt Car-fender G. G. Frey et al Car-ancoupling mechanism O. Anderson Cars. Sill-protector, holster-stop and truss- rod support for J. Erickson Carbureter G. J. F. Rvan Carbureter G. J. F. Cleal Cart. Concrete C. A. Baker Cartridge-belt. 2 pats W. C. Fisher Cash-registor J. J. C. Clear Cash-registor J. F. Cleal Caster device for tubs, &c. Leg-lifting F. Casting under pressure small metal pieces, Annaratus for B. Flatschick Cellulose, Manufacture of threads, fila- ments, strips and films of J. F. Wilson Centering-machine G. G. B. Brenneisan Chain attachment. Everlass. E. R. Matters Chaine-making machine J. Rosonfeld Chemical compound A. Eklund Chuck, Planer W. Honschied Churn J. T. Anthony Churn J. H. Honkins Cicar-chest A. Sargent Cicar cutter and lighter W. A. McAneny Circuit-controlling device P. Dunning Circuit-controlling device P. Dunning Circuit-controlling device P. Dunning Circuit-controlling mechanism Circuit-controlling mechanism Circuit-controlling mechanism Circuit-controlling mechanism Circuit-controlling mechanism Circuit-controlling device P. Dunning Circuit-controlling device P. Dunning Circuit-controlling device P. Dunning Circuit-controlling device P. Dunning Circuit-controlling device P. C. H. Stahl Clothes-pin A. H. Wiley et al Clothes-pin A. H. Wiley et al Clothes-pin A. H. Wiley et al Clothes-pin A. H. Wiley Collapsible box K. Smith Collapsible box K. Smith Collapsible box K. Smith Collapsible box K. Smith Collapsible box R. K. Smith Collapsible box R. K. Smith Collapsible box R. C. L. Taylor Conset Laminated transformer O. Wiemer Coyset Laminated transformer O. Wiemer Coyset Laminated transformer O. Wiemer Container-closure D. J. R. Harbock Concrete-mixing machine E. W. Thompson Cotton-batting and product of the same, Manufacturing E. W. Thom
Car-coupling G. G. J. Lange Car-door closure A. Faget Car door, Freight F. L. Lange Car-door closure A. F. L. Lange Car-door closure A. F. L. Lange Car-door hanger I. S. Fratt Car-fender G. G. Frey et al Car-ancoupling mechanism O. Anderson Cars. Sill-protector, holster-stop and truss- rod support for J. Erickson Carbureter G. J. F. Rvan Carbureter G. J. F. Cleal Cart. Concrete C. A. Baker Cartridge-belt. 2 pats W. C. Fisher Cash-registor J. J. C. Clear Cash-registor J. F. Cleal Caster device for tubs, &c. Leg-lifting F. Casting under pressure small metal pieces, Annaratus for B. Flatschick Cellulose, Manufacture of threads, fila- ments, strips and films of J. F. Wilson Centering-machine G. G. B. Brenneisan Chain attachment. Everlass. E. R. Matters Chaine-making machine J. Rosonfeld Chemical compound A. Eklund Chuck, Planer W. Honschied Churn J. T. Anthony Churn J. H. Honkins Cicar-chest A. Sargent Cicar cutter and lighter W. A. McAneny Circuit-controlling device P. Dunning Circuit-controlling device P. Dunning Circuit-controlling device P. Dunning Circuit-controlling mechanism Circuit-controlling mechanism Circuit-controlling mechanism Circuit-controlling mechanism Circuit-controlling mechanism Circuit-controlling device P. Dunning Circuit-controlling device P. Dunning Circuit-controlling device P. Dunning Circuit-controlling device P. Dunning Circuit-controlling device P. C. H. Stahl Clothes-pin A. H. Wiley et al Clothes-pin A. H. Wiley et al Clothes-pin A. H. Wiley et al Clothes-pin A. H. Wiley Collapsible box K. Smith Collapsible box K. Smith Collapsible box K. Smith Collapsible box K. Smith Collapsible box R. K. Smith Collapsible box R. K. Smith Collapsible box R. C. L. Taylor Conset Laminated transformer O. Wiemer Coyset Laminated transformer O. Wiemer Coyset Laminated transformer O. Wiemer Container-closure D. J. R. Harbock Concrete-mixing machine E. W. Thompson Cotton-batting and product of the same, Manufacturing E. W. Thom
Car-coupling
car-door crosure
car-door crosure
Car door, Freight. F. L. Lane Car-door hanger . J. S. Pratt Car-fender. G. Frey et al Car-meounling mechanism . O. Anderson Cars. Sill-protector, holster-stop and trussrod support for . J. Erickson Carbureter . J. P. Rvan Carbureter . J. P. Rvan Carbureter . J. P. Rvan Carbureter of gas-engines . L. C. Gerken Cart. Concrete . C. A. Baker Cartridge-helt . 2 pats . W. C. Fisher Cash-registor . J. P. Cleal Casher device for tubs, &c. Leg-lifting . F. Cash-registor . W. W. Teriff Cashing under pressure small metal pices. Annaratus for . B. Platschick Cellulose, Manufacture of threads, filaments, strips and films of . L. P. Wilson Centering-machine . G. B. Brennelsan Change-making machine . I. Rosenfeld Chemical compound. A. Eklund Chuek, Planer . W. Honscheid Churn . J. T. Anthony Churn . J. H. Honkins Cigar-chest . A. Sargent Cigar-chest . A. Sargent Cigar-chest . A. Sargent Cigar-chest . A. K. L. F. Grienit-controlling device . P. Dunning Circuit-controlling device . J. K. Lux Circuit-controlling device . J. C. Whittles Cloth-s-pin . A. H. Wiley et al Cloth-tentering machines, Selvage-feed for . J. C. Whittles Clothes-pin . A. H. Wiley et al Cloth-swringer . R. B. Snencer Clutch . M. L. Poulter Fin Coke ovens. Heating arrangement for retort . Coke ovens. Heating arrangement for retort . Coke ovens. Heating arrangement for retort . Coke-ovens. Heating arrangement for retort . Coke-ovens. Heating arrangement for retort . D. M. Duller Controller-handle . F. E. Caso Cooker Steam . W. A. C. Murphy Core. Laminated transformer . G. Wiemer Cores of the device . J. R. Harbeck Controller-handle . F. E. Caso Cooker Steam . W. A. C. Murphy Core. Laminated transformer . G. Wiemer Cores L. L. Taylor . C. C. Earle Cotton-chopper . S. Stallings Cotton-chopper . S. St
Car-door hanger. J. S. Pratt Car-fender. G. Frey et al Car-encoupling mechanism. O. Anderson Cars, Sill-protector, bolster-stop and trussrod support for J. Erickson Carbureter. J. P. Rvan Carbureter or gas-engines. L. C. Gerken F. Cartridge-belt. 2 pats. W. C. Fisher Cartridge-belt. 2 pats. W. C. Fisher F. Cash-register. J. P. Cleal Caster device for tubs. &c. Leg-lifting. G. Caster device for device for tubs. &c. Leg-lifting. G. Caster device for
Car-incoupling mechanism. O. Anderson Cars. Sill-protector, bolster-stop and truss- rod sumport for. J. Erickson Carbureter. J. P. Rvan Carbureter for gas-engines. L. C. Gerken Cart. Concrete. C. A. Baker Cartridge-belt. 2 pats. W. C. Fisher Cash-registor. J. P. Cleal Caster device for tubs. &c. Leg-lifting. F. Casting under pressure small metal picces. Annaratus for. B. Platschick Cellulose, Manufactune of threads, fila- ments, strips and films of. L. P. Wilson Centering-machine. G. B. Brenneisen Chain attachment. Eveglass. E. R. Mafters Change-making machine. I. Rosenfeld Chemical compound. A. Eklund Chuek, Planer. W. Honscheid Chunn. J. T. Anthony Churn. J. H. Hopkins Cigar-chest. A. Sargent Clear cutter and lighter. W. A. McAneny Circuit-controlling device. P. Dunning Circuit-controlling device. J. K. Lux Circuit-controlling machanism. Clasp. C. H. Stahl Cleaning device. G. Clements et al Cloth-tentering machines. Selvage-feed for J. C. Whittles Clothes-pin. A. H. Wilev et al Cloth-tentering machines. Selvage-feed for Cock or faucet. A. C. Schuermann Code system. Cable. C. H. Keehn Coke-ovens. Heating arrangement for refort Cock of faucet. A. C. Schuermann Code system. Cable. C. H. Keehn Coke-ovens. Heating arrangement for refort Cock of faucet. A. C. Schuermann Code system. Cable. C. H. Keehn Collarshibe box. K. Smith Collarshibe box. K. Smith Collarshibe box. K. Smith Collarshibe box. K. Smith Collarship and product of the same, Manufacturing. E. W. Thompson Core. Laminated transformer. O. Wiemer Coreste-mixing machine. J. E. Noolittle Controller-handle. F. E. Case Cooker, Stem. W. A. C. Lindgen Cotton-batting and product of the same, Manufacturing. E. W. Thompson Cotton-chapting and product of the same, Manufacturing. E. W. Thompson Cotton-chapting and product of the same, Manufacturing. E. W. Thompson Cotton-batting and product of the same, Manufacturing. C. C. Eavle Cotton-batting and prod
Car-nucounling mechanism. O. Anderson Cars. Sill-protector, holster-stop and trussrod support for J. Erickson Carbureter J. P. Rvan Carbureter for gas-engines . L. C. Gerken F. Cart. Concrete C. A. Baker Cart. Concrete C. A. Baker Cart. Concrete C. A. Baker Cart. Concrete J. P. Cleal Caster device for tubs. &c. Leg-lifting F. Cashing under pressure small metal picees. Annaratus for B. Platschiek F. Celbulose, Manufacture of threads, filaments, strips and films of L. P. Wilson Centering-machine G. B. Brennelsan Chain attachment. Evcelass. E. R. Matters Change-making machine L. Rosenfeld Chemical compound A. Eklund Chuck, Planer W. Honschief Churn J. T. Anthony Circuit-controlling device P. Dunning Circuit-controlling device J. K. Lux Circuit-controlling device J. K. Lux Circuit-controlling device J. K. Lux Circuit-controlling mechanism W. A. Atwood Clasp C. H. Stahl Cleaning device G. Clements et al Cloth-es-pin A. H. Wiley et al Clothes-pin
Cars. Sill-protector, holster-stop and fruss- red support for J. P. Ryan Carbureter J. P. Ryan Carbureter for gas-engines L. C. Gerken Cart. Concrete C. A. Baker Cartridge-belt .2 pats W. C. Fisher Cashregister J. P. Cleal Caster device for tubs, &c. Leg-lifting L. C. W. W. Teriff Casting under pressure small metal pieces, Annaratus for B. Platschick Cellulose, Manufacture of threads, fila- ments, strips and films of L. P. Wilson Centering-machine G. P. Brenneisen Chain attachment, Eveglass E. R. Matters Change-making machine I. Rosenfeld Chemical compound A. Eklund Chuck, Planer W. Honscheid Churn J. H. Honkins Cigar-chest A. Sargent Cigar-chest A. Sargent Cigar-chest A. Sargent Cigar-chest A. McAneny Circuit-controlling device P. Dunning Circuit-controlling device P. Dunning Circuit-controlling device P. Dunning Circuit-controlling device P. Dunning Circuit-controlling mechanism Collaps C. H. Stahl Cleaning device G. Clements et al Cloth-tentering machines, Selvage-feed for L. C. Whittles Clothes-pin A. H. Wiley et al Clothes-wringer R. B. Snencer Clutch, Friction C. F. Riedsoe Cock and the like R. Kilnger Cock of fancet A. C. Schnermann Code system, Cable C. H. Keehn Coke-ovens, Heating arrangement for retort Collapsible box K. Smith Collapsible box K. Smith Collapsible box K. Smith Collapsible box K. Smith Collapsible box E. W. Krone Concrete structures, Form for building Controller-handle F. E. Caso Cooker, Steam W. A. C. Murphy Core, Laminated transformer O. Wiemer Coreset J. E. Doolittle Controller-handle F. E. Caso Cooker, Steam W. A. C. Murphy Core, Laminated transformer O. Wiemer Coreset J. E. Doolittle Cotton-batting and product of the same, Mannfacturing E. W. Thompson Cotton-chopper S. Stallings Cotton-from the boll, Apparatus for nick- ing C. C. Earle Cotton-chopper S. Stallings Cotton-chopper
rod support for J. Erickson Carbureter J. P. Ivan Carbureter for gas-engines L. C. Gerken Cart. Concrete C. A. Baker Cart. Concrete C. A. Baker Cart. Concrete W. W. Feisher Cartridge-helt . 2 pats W. C. Fisher Cash-register J. F. Cleal Caster device for tubs, &c. Leg-lifting F. Casting under pressure small metal pieces, Annaratus for B. Platschick Cellulose, Manufacture of threads filaments, strips and films of J. Wilson Centering-machine G. B. Breuncisen Chain attachment, Eveglass E. R. Mafters Change-making machine I. Rosenfeld Chemical compound A. Eklund Chuck, Planer W. Honscheid Churn J. T. Anthony Churn J. H. Hopkins Cigar-chest A. Sargent Cigar cutter and lighter W. A. McAneny Cigar-chest A. Sargent Cigar cutter and lighter W. A. McAneny Circuit-controlling device J. K. Lux Circuit-controlling device J. K. Lux Circuit-controlling device J. K. Lux Circuit-controlling mechanism W. A. Atwood Clasp C. H. Stahl Cleaning device J. C. Whittles Clothes-winger R. P. Sneneer Clutch M. J. Coulter Clutch M. J. Poulter Clutch M. J. Poulter Clutch M. J. Poulter Clutch C. F. Rledsoc Cock and the like R. Kilnger Cock or funcet A. C. Schnermann Code system. Cable C. H. Keehn Coke-ovens. Heating arrangement for retort E. W. King G. Cocker Steam M. J. J. Alexander Concrete structures. Form for building G. Cocker Steam W. A. C. Murphy Core. Laminated transformer O. Wiemer Corest J. E. Doolittle Controller-handle F. E. Caso Cooker Steam W. A. C. Murphy Core. Laminated transformer O. Wiemer Corest M. J. J. Alexander Controller-handle F. E. Caso Cooker Steam W. A. C. Murphy Core. Laminated transformer O. Wiemer Corest L. R. M. C. Lindgren Controller-handle F. E. Caso Cooker Steam W. A. C. Lindgren Counting apparatus. Thread
Carbureter for gas-engines. L. C. Gerken Cart. Concrete C. A. Baker Cart. Concrete W. W. Teriff Cash-register J. P. Cleal Caster device for tubs. &c. Leg-lifting F. Casting under pressure small metal pieces. Annaratns for B. Platschick Cellulose, Manufacture of threads. filaments, strips and films of L. P. Wilson Centering-machine G. B. Brenncison Chain attachment, Eveglass. E. R. Matters Change-making machine. I. Rosenfeld Chemical compound A. Eklund Chuck, Planer. W. Honscheid Churn J. T. Antbony Churn J. T. Antbony Churn J. H. Honkins Cigar-chest A. Sargent Cigar cutter and lighter. W. A. McAneny Circuit-controlling device J. K. Lux Circuit-controlling device J. K. Lux Circuit-controlling device J. K. Lux Circuit-controlling device J. C. Whittles Clothes-pin A. H. Wiley et al. Cloth-tentering machines. Selvage-feed for L. C. Whittles Clothes-wringer R. B. Sanencer Clutch. Friction & R. B. Sanencer Cock or fancet A. C. Schnermann Code system. Cable & C. H. Keehn Coke-ovens. Heating arrangement for rotort & R. W. King Collapsible box & R. Kilinger Cock or fancet & R. Kilinger Constanting machine & Murrphy Core. Laminated transformer & W. Thompson Cotton-chopper & S. Stallings Cotton-part & R. L. Riley Controller-handle & R. Kilinger Cotton-part & R. L. Chronik Crane, Jih & R. L. Chronik Crane, Jih & R. L. Chronik Crane, Jih & R. L. L. Chronik Crane, Jih & R. L. L. Chronik Crane, Jih
Carbureter for gas-engines. L. C. Gerken Cart. Concrete
Cartridge-belt. 2 pats. W. C. Fisher Cash-register. J. P. Cleal Caster device for tubs. &c. Leg-lifting. F. Casting under pressure small metal pieces. Annaratus for. B. Platschick Cellulose, Manufacture of threads, filaments, strips and films of . L. P. Wilson Centering-machine. G. B. Brenneisen Chain attachment, Eveglass. E. R. Mafters Change-making machine. I. Rosonfeld Chemical compound. A. Eklund Chuck, Planer. W. Honschoid Churn. J. T. Antbony Churn. J. T. Antbony Churn. J. H. Honkins Cigar-chest. A. Sargent Cigar cutter and lighter. W. A. McAneny Circuit-controlling device. P. Dunning Circuit-controlling device. J. K. Lux Cicuit-controlling device. J. K. Lux Cicuit-controlling mechanism. F. C. Whittles Clothes-pin. A. H. Wiley et al Cloth-tentering machines. Selvage-feed for . J. C. Whittles Clothes-pin. A. H. Wiley et al Cloth-tentering machines. Selvage-feed for . J. C. Whittles Clothes-wringer. R. B. Sneneer Clutch. Friction. C. F. Eledsoe Cock or faucet. A. C. Schnermann Code system. Cable. C. H. Keehn Coke-ovens. Heating arrangement for retort . E. W. King Collapsible box. K. Smith Collar attachment. E. M. Crane Column-base. S. L. Riley Combination-lock. M. L. Hitchcock Concrete-mixing machine. J. R. Harbeck Controller-handle. F. E. Caso Cooker. Steam. W. A. C. Murphy Core. Laminated transformer. O. Wiemer Corset. J. E. Doolittle Cotton-batting and product of the same, Manufacturing. E. W. Thommson Cotton-chopper. S. Stallings Corton-batting and product of the same, Manufacturing and product of the same
Cartridge-belt. 2 pats. W. C. Fisher Cash-register. J. P. Cleal Caster device for tubs. &c. Leg-lifting. F. Casting under pressure small metal pieces. Annaratus for. B. Platschick Cellulose, Manufacture of threads, filaments, strips and films of . L. P. Wilson Centering-machine. G. B. Brenneisen Chain attachment, Eveglass. E. R. Mafters Change-making machine. I. Rosonfeld Chemical compound. A. Eklund Chuck, Planer. W. Honschoid Churn. J. T. Antbony Churn. J. T. Antbony Churn. J. H. Honkins Cigar-chest. A. Sargent Cigar cutter and lighter. W. A. McAneny Circuit-controlling device. P. Dunning Circuit-controlling device. J. K. Lux Cicuit-controlling device. J. K. Lux Cicuit-controlling mechanism. F. C. Whittles Clothes-pin. A. H. Wiley et al Cloth-tentering machines. Selvage-feed for . J. C. Whittles Clothes-pin. A. H. Wiley et al Cloth-tentering machines. Selvage-feed for . J. C. Whittles Clothes-wringer. R. B. Sneneer Clutch. Friction. C. F. Eledsoe Cock or faucet. A. C. Schnermann Code system. Cable. C. H. Keehn Coke-ovens. Heating arrangement for retort . E. W. King Collapsible box. K. Smith Collar attachment. E. M. Crane Column-base. S. L. Riley Combination-lock. M. L. Hitchcock Concrete-mixing machine. J. R. Harbeck Controller-handle. F. E. Caso Cooker. Steam. W. A. C. Murphy Core. Laminated transformer. O. Wiemer Corset. J. E. Doolittle Cotton-batting and product of the same, Manufacturing. E. W. Thommson Cotton-chopper. S. Stallings Corton-batting and product of the same, Manufacturing and product of the same
Cellulose, Manufacture of threads, filaments, strips and films of L. P. Wilson Centering-machine
Cellulose, Manufacture of threads, filaments, strips and films of L. P. Wilson Centering-machine
Cellulose, Manufacture of threads, filaments, strips and films of L. P. Wilson Centering-machine
Cellulose, Manufacture of threads, filaments, strips and films of L. P. Wilson Centering-machine
Cellulose, Manufacture of threads, filaments, strips and films of L. P. Wilson Centering-machine
Cellulose, Manufacture of threads, filaments, strips and films of L. P. Wilson Centering-machine
Cellulose, Manufacture of threads, filaments, strips and films of L. P. Wilson Centering-machine
Centering-machine
Centering-machine
Chemical compound. A. Eklund Chuck, Planer. W. Honscheid Churn. J. T. Anthony Churn. J. H. Honkins Cigar-chest. A. Sargent Cigar cutter and lighter. W. A. McAneny Circuit-controlling device. P. Dunning Circuit-controlling device. J. K. Lux Circuit-controlling mechanism. W. A. Atwood Clasp. C. H. Stahl Cleaning device. G. Clements et al Cloth-tentering machines, Selvage-feed for J. C. Whittles Clothes-pin. A. H. Wiley et al Clothes-wringer. R. B. Snencer Clutch. M. I., Poulter Clutch. Friction. C. F. Rledsoe Cock and the like. R. Klinger Cock or fancet. A. C. Schuermann Code system. Cable. C. H. Keehn Coke-ovens, Heating arrangement for retort E. W. King Combination-lock. M. L. Hitchcock Concrete-mixing machine. Controller-handle. F. E. Caso Cooker. Steam. W. A. C. Murnhy Core. Laminated transformer. O. Wiemer Corset. J. R. Harbeck Controller-handle. F. E. Caso Cooker. Steam. W. A. C. Murnhy Core. Laminated transformer. O. Wiemer Corset. J. E. Doolitte Cotton-batting and product of the same, Mannfacturing E. W. Thomson Cotton-chopper. S. Stallings Cotton from the boll, Apparatus for pick- ing. C. C. Earle Cotton-gin. T. D. Fallon Counting apparatus. Thread Counti
Chemical compound. A. Eklund Chuck, Planer. W. Honscheid Churn. J. T. Anthony Churn. J. H. Honkins Cigar-chest. A. Sargent Cigar cutter and lighter. W. A. McAneny Circuit-controlling device. P. Dunning Circuit-controlling device. J. K. Lux Circuit-controlling mechanism. W. A. Atwood Clasp. C. H. Stahl Cleaning device. G. Clements et al Cloth-tentering machines, Selvage-feed for J. C. Whittles Clothes-pin. A. H. Wiley et al Clothes-wringer. R. B. Snencer Clutch. M. I., Poulter Clutch. Friction. C. F. Rledsoe Cock and the like. R. Klinger Cock or fancet. A. C. Schuermann Code system. Cable. C. H. Keehn Coke-ovens, Heating arrangement for retort E. W. King Combination-lock. M. L. Hitchcock Concrete-mixing machine. Controller-handle. F. E. Caso Cooker. Steam. W. A. C. Murnhy Core. Laminated transformer. O. Wiemer Corset. J. R. Harbeck Controller-handle. F. E. Caso Cooker. Steam. W. A. C. Murnhy Core. Laminated transformer. O. Wiemer Corset. J. E. Doolitte Cotton-batting and product of the same, Mannfacturing E. W. Thomson Cotton-chopper. S. Stallings Cotton from the boll, Apparatus for pick- ing. C. C. Earle Cotton-gin. T. D. Fallon Counting apparatus. Thread Counti
Chemical compound. A. Eklund Chuck, Planer. W. Honscheid Churn. J. T. Anthony Churn. J. H. Honkins Cigar-chest. A. Sargent Cigar cutter and lighter. W. A. McAneny Circuit-controlling device. P. Dunning Circuit-controlling device. J. K. Lux Circuit-controlling mechanism. W. A. Atwood Clasp. C. H. Stahl Cleaning device. G. Clements et al Cloth-tentering machines, Selvage-feed for J. C. Whittles Clothes-pin. A. H. Wiley et al Clothes-wringer. R. B. Snencer Clutch. M. I., Poulter Clutch. Friction. C. F. Rledsoe Cock and the like. R. Klinger Cock or fancet. A. C. Schuermann Code system. Cable. C. H. Keehn Coke-ovens, Heating arrangement for retort E. W. King Combination-lock. M. L. Hitchcock Concrete-mixing machine. Controller-handle. F. E. Caso Cooker. Steam. W. A. C. Murnhy Core. Laminated transformer. O. Wiemer Corset. J. R. Harbeck Controller-handle. F. E. Caso Cooker. Steam. W. A. C. Murnhy Core. Laminated transformer. O. Wiemer Corset. J. E. Doolitte Cotton-batting and product of the same, Mannfacturing E. W. Thomson Cotton-chopper. S. Stallings Cotton from the boll, Apparatus for pick- ing. C. C. Earle Cotton-gin. T. D. Fallon Counting apparatus. Thread Counti
Cigar cutter and lighter. W. A. McAneny Circuit-controlling device. P. Dunning Circuit-controlling device. J. K. Lux Circuit-controlling device. J. K. Lux Circuit-controlling mechanism. W. A. Atwood Clasp. C. H. Stahl Cleaning device. G. Clements et al Clothestentering machines. Selvage-feed for J. C. Whittles Clothes-pin. A. H. Wiley et al Clothes-wringer. R. B. Sneneer Clutch. M. L. Ponlter Clutch. Friction. C. F. Bledsoe Cock and the like. R. Klinger Cock or fancet. A. C. Schuermann Code system. Cable. C. H. Keehn Coke-ovens. Heating arrangement for retort Collapsible box. K. Smith Collar affachment. E. M. Crane Column-base. S. L. Riley Combination-lock. M. L. Hitchcock Concrete-mixing machine. Container-closure. J. R. Harbeck Controller-handle. F. C. Case Cooker. Steam. W. A. C. Murphy Core. Laminated transformer. O. Wiemer Corest. J. E. Doolittle Cotton-batting and product of the same. Manufacturing. E. W. Thomnson Cotton-chopper. S. Stallings Cotton from the boll. Apparatus for nick- ing. C. C. Earle Cotton-gin. T. D. Fallon Counting apparatus. Thread. Crane. Jib. H. N. Wylie Cranes. Rridge for overhead traveling. Crusbing-machine. J. E. Svytons Crusbing-machine. J. C. M. Arnold Cultivator, Subsoil. O. J. Springer Cultivator, Subsoil. O. J. Springer Cultivator, Subsoil. O. J. Springer Cultivator, Wheeled. 2 pats. A. C. Lindgren Cultivator, Wheeled. 2 pats. A. C. Lindgren Cultivator, Wheeled. 2 pats. A. C. Lindgren Cultivator, Wheeled. 2
Cigar cutter and lighter. W. A. McAneny Circuit-controlling device. P. Dunning Circuit-controlling device. J. K. Lux Circuit-controlling device. J. K. Lux Circuit-controlling mechanism. W. A. Atwood Clasp. C. H. Stahl Cleaning device. G. Clements et al Clothestentering machines. Selvage-feed for J. C. Whittles Clothes-pin. A. H. Wiley et al Clothes-wringer. R. B. Sneneer Clutch. M. L. Ponlter Clutch. Friction. C. F. Bledsoe Cock and the like. R. Klinger Cock or fancet. A. C. Schuermann Code system. Cable. C. H. Keehn Coke-ovens. Heating arrangement for retort Collapsible box. K. Smith Collar affachment. E. M. Crane Column-base. S. L. Riley Combination-lock. M. L. Hitchcock Concrete-mixing machine. Container-closure. J. R. Harbeck Controller-handle. F. C. Case Cooker. Steam. W. A. C. Murphy Core. Laminated transformer. O. Wiemer Corest. J. E. Doolittle Cotton-batting and product of the same. Manufacturing. E. W. Thomnson Cotton-chopper. S. Stallings Cotton from the boll. Apparatus for nick- ing. C. C. Earle Cotton-gin. T. D. Fallon Counting apparatus. Thread. Crane. Jib. H. N. Wylie Cranes. Rridge for overhead traveling. Crusbing-machine. J. E. Svytons Crusbing-machine. J. C. M. Arnold Cultivator, Subsoil. O. J. Springer Cultivator, Subsoil. O. J. Springer Cultivator, Subsoil. O. J. Springer Cultivator, Wheeled. 2 pats. A. C. Lindgren Cultivator, Wheeled. 2 pats. A. C. Lindgren Cultivator, Wheeled. 2 pats. A. C. Lindgren Cultivator, Wheeled. 2
Cigar cutter and lighter. W. A. McAneny Circuit-controlling device. P. Dunning Circuit-controlling device. J. K. Lux Circuit-controlling device. J. K. Lux Circuit-controlling mechanism. W. A. Atwood Clasp. C. H. Stahl Cleaning device. G. Clements et al Clothestentering machines. Selvage-feed for J. C. Whittles Clothes-pin. A. H. Wiley et al Clothes-wringer. R. B. Sneneer Clutch. M. L. Ponlter Clutch. Friction. C. F. Bledsoe Cock and the like. R. Klinger Cock or fancet. A. C. Schuermann Code system. Cable. C. H. Keehn Coke-ovens. Heating arrangement for retort Collapsible box. K. Smith Collar affachment. E. M. Crane Column-base. S. L. Riley Combination-lock. M. L. Hitchcock Concrete-mixing machine. Container-closure. J. R. Harbeck Controller-handle. F. C. Case Cooker. Steam. W. A. C. Murphy Core. Laminated transformer. O. Wiemer Corest. J. E. Doolittle Cotton-batting and product of the same. Manufacturing. E. W. Thomnson Cotton-chopper. S. Stallings Cotton from the boll. Apparatus for nick- ing. C. C. Earle Cotton-gin. T. D. Fallon Counting apparatus. Thread. Crane. Jib. H. N. Wylie Cranes. Rridge for overhead traveling. Crusbing-machine. J. E. Svytons Crusbing-machine. J. C. M. Arnold Cultivator, Subsoil. O. J. Springer Cultivator, Subsoil. O. J. Springer Cultivator, Subsoil. O. J. Springer Cultivator, Wheeled. 2 pats. A. C. Lindgren Cultivator, Wheeled. 2 pats. A. C. Lindgren Cultivator, Wheeled. 2 pats. A. C. Lindgren Cultivator, Wheeled. 2
Cigar cutter and lighter. W. A. McAneny Circuit-controlling device. P. Dunning Circuit-controlling device. J. K. Lux Circuit-controlling device. J. K. Lux Circuit-controlling mechanism. W. A. Atwood Clasp. C. H. Stahl Cleaning device. G. Clements et al Clothestentering machines. Selvage-feed for J. C. Whittles Clothes-pin. A. H. Wiley et al Clothes-wringer. R. B. Sneneer Clutch. M. L. Ponlter Clutch. Friction. C. F. Bledsoe Cock and the like. R. Klinger Cock or fancet. A. C. Schuermann Code system. Cable. C. H. Keehn Coke-ovens. Heating arrangement for retort Collapsible box. K. Smith Collar affachment. E. M. Crane Column-base. S. L. Riley Combination-lock. M. L. Hitchcock Concrete-mixing machine. Container-closure. J. R. Harbeck Controller-handle. F. C. Case Cooker. Steam. W. A. C. Murphy Core. Laminated transformer. O. Wiemer Corest. J. E. Doolittle Cotton-batting and product of the same. Manufacturing. E. W. Thomnson Cotton-chopper. S. Stallings Cotton from the boll. Apparatus for nick- ing. C. C. Earle Cotton-gin. T. D. Fallon Counting apparatus. Thread. Crane. Jib. H. N. Wylie Cranes. Rridge for overhead traveling. Crusbing-machine. J. E. Svytons Crusbing-machine. J. C. M. Arnold Cultivator, Subsoil. O. J. Springer Cultivator, Subsoil. O. J. Springer Cultivator, Subsoil. O. J. Springer Cultivator, Wheeled. 2 pats. A. C. Lindgren Cultivator, Wheeled. 2 pats. A. C. Lindgren Cultivator, Wheeled. 2 pats. A. C. Lindgren Cultivator, Wheeled. 2
Cigar cutter and lighter. W. A. McAneny Circuit-controlling device. P. Dunning Circuit-controlling device. J. K. Lux Circuit-controlling device. J. K. Lux Circuit-controlling mechanism. W. A. Atwood Clasp. C. H. Stahl Cleaning device. G. Clements et al Clothestentering machines. Selvage-feed for J. C. Whittles Clothes-pin. A. H. Wiley et al Clothes-wringer. R. B. Sneneer Clutch. M. L. Ponlter Clutch. Friction. C. F. Bledsoe Cock and the like. R. Klinger Cock or fancet. A. C. Schuermann Code system. Cable. C. H. Keehn Coke-ovens. Heating arrangement for retort Collapsible box. K. Smith Collar affachment. E. M. Crane Column-base. S. L. Riley Combination-lock. M. L. Hitchcock Concrete-mixing machine. Container-closure. J. R. Harbeck Controller-handle. F. C. Case Cooker. Steam. W. A. C. Murphy Core. Laminated transformer. O. Wiemer Corest. J. E. Doolittle Cotton-batting and product of the same. Manufacturing. E. W. Thomnson Cotton-chopper. S. Stallings Cotton from the boll. Apparatus for nick- ing. C. C. Earle Cotton-gin. T. D. Fallon Counting apparatus. Thread. Crane. Jib. H. N. Wylie Cranes. Rridge for overhead traveling. Crusbing-machine. J. E. Svytons Crusbing-machine. J. C. M. Arnold Cultivator, Subsoil. O. J. Springer Cultivator, Subsoil. O. J. Springer Cultivator, Subsoil. O. J. Springer Cultivator, Wheeled. 2 pats. A. C. Lindgren Cultivator, Wheeled. 2 pats. A. C. Lindgren Cultivator, Wheeled. 2 pats. A. C. Lindgren Cultivator, Wheeled. 2
Cigar cutter and lighter. W. A. McAneny Circuit-controlling device. P. Dunning Circuit-controlling device. J. K. Lux Circuit-controlling device. J. K. Lux Circuit-controlling mechanism. W. A. Atwood Clasp. C. H. Stahl Cleaning device. G. Clements et al Clothestentering machines. Selvage-feed for J. C. Whittles Clothes-pin. A. H. Wiley et al Clothes-wringer. R. B. Sneneer Clutch. M. L. Ponlter Clutch. Friction. C. F. Bledsoe Cock and the like. R. Klinger Cock or fancet. A. C. Schuermann Code system. Cable. C. H. Keehn Coke-ovens. Heating arrangement for retort Collapsible box. K. Smith Collar affachment. E. M. Crane Column-base. S. L. Riley Combination-lock. M. L. Hitchcock Concrete-mixing machine. Container-closure. J. R. Harbeck Controller-handle. F. C. Case Cooker. Steam. W. A. C. Murphy Core. Laminated transformer. O. Wiemer Corest. J. E. Doolittle Cotton-batting and product of the same. Manufacturing. E. W. Thomnson Cotton-chopper. S. Stallings Cotton from the boll. Apparatus for nick- ing. C. C. Earle Cotton-gin. T. D. Fallon Counting apparatus. Thread. Crane. Jib. H. N. Wylie Cranes. Rridge for overhead traveling. Crusbing-machine. J. E. Svytons Crusbing-machine. J. C. M. Arnold Cultivator, Subsoil. O. J. Springer Cultivator, Subsoil. O. J. Springer Cultivator, Subsoil. O. J. Springer Cultivator, Wheeled. 2 pats. A. C. Lindgren Cultivator, Wheeled. 2 pats. A. C. Lindgren Cultivator, Wheeled. 2 pats. A. C. Lindgren Cultivator, Wheeled. 2
Clasp
Clasp
Clasp
Clasp
Cloth-tentering machines, Selvage-feed for J. C. Whittles Clothes-pin. A. H. Wiley et al Clothes-wringer. R. B. Snencer Clutch. M. L. Poulter Clutch. Friction. C. F. Bledsoe Cock and the like R. Klinger Cock or faucet. A. C. Schuermann Code system. Cable C. H. Keehn Coke-ovens. Heating arrangement for retort E. W. King Collar attachment E. M. Crane Column-base. S. L. Riley Combination-lock M. L. Hitchcock Concrete-mixing machine. C. M. Duller Container-closure J. R. Harbeck Controller-handle F. E. Case Cocker, Steam W. A. C. Murphy Core, Laminated transformer O. Wiemer Corset. J. E. Doolittle Cotton-batting and product of the same. Manufacturing E. W. Thomnson Cotton-chopper S. Stallings Cotton from the boll, Apparatus for nicking. C. C. Earle Cotton-gin. T. D. Fallon Counting apparatus. Thread Counting apparatus. Thread Counting apparatus. Thread Counting apparatus. Thread Counting attachment J. E. Systons Crutch attachment J. D. Springer Cultivator, Subsoil. O. J. Springer Cultivator Attachment J. W. Arnold Gio
Cloth-tentering machines, Selvage-feed for J. C. Whittles Clothes-pin. A. H. Wiley et al Clothes-wringer. R. B. Snencer Clutch. M. L. Poulter Clutch. Friction. C. F. Bledsoe Cock and the like R. Klinger Cock or faucet. A. C. Schuermann Code system. Cable C. H. Keehn Coke-ovens. Heating arrangement for retort E. W. King Collar attachment E. M. Crane Column-base. S. L. Riley Combination-lock M. L. Hitchcock Concrete-mixing machine. C. M. Duller Container-closure J. R. Harbeck Controller-handle F. E. Case Cocker, Steam W. A. C. Murphy Core, Laminated transformer O. Wiemer Corset. J. E. Doolittle Cotton-batting and product of the same. Manufacturing E. W. Thomnson Cotton-chopper S. Stallings Cotton from the boll, Apparatus for nicking. C. C. Earle Cotton-gin. T. D. Fallon Counting apparatus. Thread Counting apparatus. Thread Counting apparatus. Thread Counting apparatus. Thread Counting attachment J. E. Systons Crutch attachment J. D. Springer Cultivator, Subsoil. O. J. Springer Cultivator Attachment J. W. Arnold Gio
Cloth-tentering machines, Selvage-feed for J. C. Whittles Clothes-pin. A. H. Wiley et al Clothes-wringer. R. B. Snencer Clutch. M. L. Poulter Clutch. Friction. C. F. Bledsoe Cock and the like R. Klinger Cock or faucet. A. C. Schuermann Code system. Cable C. H. Keehn Coke-ovens. Heating arrangement for retort E. W. King Collar attachment E. M. Crane Column-base. S. L. Riley Combination-lock M. L. Hitchcock Concrete-mixing machine. C. M. Duller Container-closure J. R. Harbeck Controller-handle F. E. Case Cocker, Steam W. A. C. Murphy Core, Laminated transformer O. Wiemer Corset. J. E. Doolittle Cotton-batting and product of the same. Manufacturing E. W. Thomnson Cotton-chopper S. Stallings Cotton from the boll, Apparatus for nicking. C. C. Earle Cotton-gin. T. D. Fallon Counting apparatus. Thread Counting apparatus. Thread Counting apparatus. Thread Counting apparatus. Thread Counting attachment J. E. Systons Crutch attachment J. D. Springer Cultivator, Subsoil. O. J. Springer Cultivator Attachment J. W. Arnold Gio
Clothes-pin
Clothes-pin
Clothes-pin A. H. Wiley et al Clothes-wringer R. B. Sneneer Clutch M. L. Pontter Clutch Friction C. F. Bledsoe Cock and the like R. Klinger Cock or faucet A. C. Schuermann Code system Cable C. H. Keehn Coke-ovens Heating arrangement for retort Collapsible box K. Smith Collar attachment E. M. Crane Column-base S. L. Riley Combination-lock M. L. Hitchcock Concrete-mixing machine Concrete structures Form for building G. Container-closure J. R. Harbeck Controller-handle F. E. Case Cooker, Steam W. A. C. Murphy Core, Laminated transformer O. Wiemer Corset J. E. Doolittle Cotton-batting and product of the same, Mannfacturing E. W. Thomoson Cotton-chopper S. Stallings Cotton from the boll, Apparatus for nicking Cotton-chopper S. Stallings Cotton-chopper S. Stallings Cotton-gin T. D. Fallon Counting apparatus, Thread Crane, Jib H. N. Wylie Crane, Jib Cranes Rridge for overhead traveling G. Crusbing-machine J. E. Syvons Crusbing-machine J. C. O. Wold Cultivator Wheeled 2 pats A. C. Lindgren Cultivator Wheeled 2 pats A. C. Lindgren Cultivator A. Warnold Curtain-holder J. Warnold Curtain-holder J. Warnold
Clutch. M. L. Poulter Clutch. M. L. Poulter Clutch. Friction C. F. Bledsoe Cock and the like R. Klinger Cock or faucet. A. C. Schuermann Code system. Cable. C. H. Keehn Coke-ovens. Heating arrangement for retort E. W. King Collapsible box K. Smith Collar attachment E. M. Crane Collumn-base. S. L. Riley Combination-lock M. L. Hitchcock Concrete-mixing machine. Concrete structures. Form for building. Container-closure J. R. Harbeck Controller-handle F. E. Caso Cooker. Steam W. A. C. Murphy Core. Laminated transformer O. Wiemer Corset. J. E. Doolittle Cotton-batting and product of the same. Mannfacturing E. W. Thompson Cotton-chopper S. Stallings Cotton from the boll, Apparatus for picking Cotton-gin. T. D. Fallon Counting apparatus. Thread Counting apparatus. Thread Crane. Jib Cranes. Rridge for overhead traveling. Crusbing-machine J. E. Symons Crutch attachment K. D. Harding Cultivator attachment L. O'Maley Cultivator Two-row A. C. Lindgren Cultivator Wheeled 2 pats A. C. Lindgren Cultivator Automatic A. W. Arnold Curtain-holder. P. Heffler Damper, Automatic A. W. Arnold
Clutch. M. L. Poulter Clutch. Friction. C. F. Bledsoe Cock and the like R. Klinger Cock or faucet. A. C. Schuermann Code system. Cable. C. H. Keehn Coke-ovens. Heating arrangement for retort Collar attachment. E. W. King Collar attachment. E. M. Crane Column-base. S. L. Riley Combination-lock. M. L. Hitchcock Concrete-mixing machine. Contrainer-closure. J. R. Harbeck Controller-handle. F. E. Case Cooker, Steam. W. A. C. Murphy Core, Laminated transformer. O. Wiemer Corset. J. E. Doolittle Cotton-batting and product of the same. Manufacturing. E. W. Thomnson Cotton-chopper. S. Stallings Cotton from the boll, Apparatus for nicking. C. C. Earle Cotton-gin. T. D. Fallon Counting apparatus, Thread. Crane, Jib. H. N. Wylie Cranes, Bridge for overhead traveling. Crusbing-machine. J. E. Sywons Crutch attachment. K. D. Harding Cultivator, Subsoil. O. J. Springer Cultivator, Subsoil. O. J. Springer Cultivator, Subsoil. O. J. Springer Cultivator, Two-row. A. C. Lindgren Cultivator, Wheeled. 2 pats. A. C. Lindgren Cultivator, Automatic. A. W. Arnold
Cock and the like R. Klinger Cock and the like R. Klinger Cock or faucet A. C. Schuermann Code system. Cable C. H. Keehn Coke-ovens. Heating arrangement for retort E. W. King Collapsible box K. Smith Collar affachment E. M. Crane Column-base S. L. Rilev Combination-lock M. L. Hitchcock Concrete-mixing machine Concrete structures. Form for building Container-closure J. R. Harbeck Controller-handle F. C. Murphy Core, Laminated transformer O. Wiemer Coreset J. E. Doolittle Cotton-batting and product of the same. Manufacturing E. W. Thomnson Cotton-chopper S. Stallings Cotton from the boll, Apparatus for nicking Cotton-gin T. D. Fallon Counting apparatus. Thread Crane, Jih H. N. Wylie Cranes, Rridge for overhead traveling C. Crusch attachment J. E. Symons Crutch attachment J. E. Symons Crutch attachment J. E. Symons Crutch attachment J. E. Symons Cultivator attachment J. O. J. Springer Cultivator, Subsoil O. J. Springer Cultivator, Subsoil O. J. Springer Cultivator, Wheeled 2 pats A. C. Lindgren Cultivator, Automatic A. W. Arnold Cultivator Automatic A. W. Arnold
Cock and the like R. Klinger Cock or faucet. A. C. Schuermann Code system. Cable C. H. Keehn Coke-ovens. Heating arrangement for retort Collapsible box E. W. King Collapsible box K. Smith College Controller-handle F. E. M. Duller Controller-handle F. E. Case Coloker. Steam W. A. C. Murphy Core. Laminated transformer O. Wiemer Corett J. E. Doolittle Cotton-batting and product of the same. Mannfacturing B. W. Thomnson Cotton-chopper S. Stallings Cotton-chopper S. Stallings Cotton-chopper S. Stallings Cotton-gin T. D. Fallon Counting apparatus. Thread Collapsible box K. D. Harding Collapsible box K. D. Lindgren Collivator Wheeled 2 pats A. C. Lindgren Collivator Wheeled 2 pats A. C. Lindgren Collevert-nine C. O. Wold Collapsible box K. D. Marley Collivator A. W. Arnold Collapsible box K. C. W. Arnold Collapsible box K. D. Marley Collivator Wheeled C. Dats A. C. Lindgren Collivator Wheeled C. Dats A. C. Lindgren Collevert-nine C. C. W. Arnold Collapsible box K. D. Marley Collivator A. W. Arnold Collapsible box K. C. M. Arnold Collapsible box K. D. W. Arnold Collapsible box K. C. M. Arnold Collapsible box K. S. Stalling C. W. Arnold Collapsible box K. S. Stalling C. W. Arnold Collapsible box K. S. Stalling C. W. Arno
Cock or faucet. A. C. Schuermann Code system. Cable. C. H. Keehn Coke-ovens. Heating arrangement for retort E. W. King Collapsible box. K. Smith Collar attachment E. M. Crane Column-base. S. L. Rilev Combination-lock. M. L. Hitchcock Goncrete-mixing machine. G. Concrete structures. Form for building. Container-closure. J. R. Harbeck Controller-handle. F. E. Case Cooker. Steam. W. A. C. Murphy Core, Laminated transformer. O. Wiemer Corset. J. E. Doolittle Cotton-batting and product of the same. Manufacturing. E. W. Thomnson Cotton-chopper. S. Stallings Cotton from the boll, Apparatus for nicking. C. C. Earle Cotton-gin. T. D. Fallon Counting apparatus. Thread. G. C. C. Earle Cotton-gin. Thread. G. C. L. Taylor Crusbing-machine. J. E. Systons Crutch attachment. K. D. Harding G. Cultivator attachment. K. D. Harding G. Cultivator, Subsoil. O. J. Springer Cultivator, Subsoil. O. J. Springer Cultivator, Subsoil. O. J. Springer Cultivator, Two-row. A. C. Lindgren Cultivator, Wheeled. 2 pats. A. C. Lindgren Cultivator, Automatic. A. W. Arnold G. Company. A. C. W. Arnold G. Curtain-holder. P. Heffler Damper. Automatic. A. W. Arnold G. Company.
Collapsible box. K. Smith Collar affachment E. M. Crane Column-base. S. L. Rilev Combination-lock M. L. Hitchcock Concrete-mixing machine. Concrete structures. Form for building. Container-closure J. R. Harbeck Controller-handle F. C. Murphy Core, Laminated transformer O. Wiemer Corset. J. E. Doolittle Cotton-batting and product of the same. Manufacturing E. W. Thomnson Cotton-chopper S. Stallings Cotton from the boll, Apparatus for nicking. Cotton-gin. T. D. Fallon Counting apparatus. Thread Crane, Jib. H. N. Wylie Cranes, Rridge for overhead traveling. Crusch attachment J. E. Symons Crutch attachment J. E. Symons Crutch attachment J. E. Symons Cultivator, Subsoil. O. J. Springer Cultivator, Subsoil. O. J. Springer Cultivator, Two-row A. C. Lindgren Cultivator, Wheeled. 2 pats. A. C. Lindgren Cultivator, Meeled. 2 pats. A. C. Lindgren Cultivator, Meeled. 2 pats. A. C. Lindgren Cultivator, Meeled. 2 pats. A. C. Lindgren Cultivator, Automatic A. W. Arnold Cultivator, Automatic. A. W. Arnold
Collapsible box. K. Smith Collar affachment E. M. Crane Column-base. S. L. Rilev Combination-lock M. L. Hitchcock Concrete-mixing machine. Concrete structures. Form for building. Container-closure J. R. Harbeck Controller-handle F. C. Murphy Core, Laminated transformer O. Wiemer Corset. J. E. Doolittle Cotton-batting and product of the same. Manufacturing E. W. Thomnson Cotton-chopper S. Stallings Cotton from the boll, Apparatus for nicking. Cotton-gin. T. D. Fallon Counting apparatus. Thread Crane, Jib. H. N. Wylie Cranes, Rridge for overhead traveling. Crusch attachment J. E. Symons Crutch attachment J. E. Symons Crutch attachment J. E. Symons Cultivator, Subsoil. O. J. Springer Cultivator, Subsoil. O. J. Springer Cultivator, Two-row A. C. Lindgren Cultivator, Wheeled. 2 pats. A. C. Lindgren Cultivator, Meeled. 2 pats. A. C. Lindgren Cultivator, Meeled. 2 pats. A. C. Lindgren Cultivator, Meeled. 2 pats. A. C. Lindgren Cultivator, Automatic A. W. Arnold Cultivator, Automatic. A. W. Arnold
Collapsible box. K. Smith Collar affachment E. M. Crane Column-base. S. L. Rilev Combination-lock M. L. Hitchcock Concrete-mixing machine. Concrete structures. Form for building. Container-closure J. R. Harbeck Controller-handle F. C. Murphy Core, Laminated transformer O. Wiemer Corset. J. E. Doolittle Cotton-batting and product of the same. Manufacturing E. W. Thomnson Cotton-chopper S. Stallings Cotton from the boll, Apparatus for nicking. Cotton-gin. T. D. Fallon Counting apparatus. Thread Crane, Jib. H. N. Wylie Cranes, Rridge for overhead traveling. Crusch attachment J. E. Symons Crutch attachment J. E. Symons Crutch attachment J. E. Symons Cultivator, Subsoil. O. J. Springer Cultivator, Subsoil. O. J. Springer Cultivator, Two-row A. C. Lindgren Cultivator, Wheeled. 2 pats. A. C. Lindgren Cultivator, Meeled. 2 pats. A. C. Lindgren Cultivator, Meeled. 2 pats. A. C. Lindgren Cultivator, Meeled. 2 pats. A. C. Lindgren Cultivator, Automatic A. W. Arnold Cultivator, Automatic. A. W. Arnold
Combination-lock. M. L. Hitchcock Concrete-mixing machine. H. J. J. Alexander Concrete structures. Form for building. D. M. Duller Container-closure. J. R. Harbock Controller-handle. F. E. Case Cooker, Steam. W. A. C. Murphy Core, Laminated transformer. O. Wiemer Corset. J. E. Doolittle Cotton-batting and product of the same. Manufacturing. E. W. Thomnson Cotton-chopper. S. Stallings Cotton from the boll, Apparatus for picking. C. C. Earle Cotton-gin. T. D. Fallon Counting apparatus. Thread. Crane, Jib. And L. Chronik Crane, Jib. H. N. Wylie Cranes, Bridge for overhead traveling. Crusbing-machine. J. E. Syvons Crutch attachment. K. D. Harding Cultivator, Subsoil. O. J. Springer Cultivator, Subsoil. O. J. Springer Cultivator, Wheeled. 2 pats. A. C. Lindgren Cultivator, A. W. Arnold Curtain-holder. P. Heffler Damper, Automatic. A. W. Arnold
Combination-lock. M. L. Hitchcock Concrete-mixing machine. H. J. J. Alexander Concrete structures. Form for building. D. M. Duller Container-closure. J. R. Harbock Controller-handle. F. E. Case Cooker, Steam. W. A. C. Murphy Core, Laminated transformer. O. Wiemer Corset. J. E. Doolittle Cotton-batting and product of the same. Manufacturing. E. W. Thomnson Cotton-chopper. S. Stallings Cotton from the boll, Apparatus for picking. C. C. Earle Cotton-gin. T. D. Fallon Counting apparatus. Thread. Crane, Jib. And L. Chronik Crane, Jib. H. N. Wylie Cranes, Bridge for overhead traveling. Crusbing-machine. J. E. Syvons Crutch attachment. K. D. Harding Cultivator, Subsoil. O. J. Springer Cultivator, Subsoil. O. J. Springer Cultivator, Wheeled. 2 pats. A. C. Lindgren Cultivator, A. W. Arnold Curtain-holder. P. Heffler Damper, Automatic. A. W. Arnold
Combination-lock. M. L. Hitchcock Concrete-mixing machine. H. J. J. Alexander Concrete structures. Form for building. D. M. Duller Container-closure. J. R. Harbock Controller-handle. F. E. Case Cooker, Steam. W. A. C. Murphy Core, Laminated transformer. O. Wiemer Corset. J. E. Doolittle Cotton-batting and product of the same. Manufacturing. E. W. Thomnson Cotton-chopper. S. Stallings Cotton from the boll, Apparatus for picking. C. C. Earle Cotton-gin. T. D. Fallon Counting apparatus. Thread. Crane, Jib. And L. Chronik Crane, Jib. H. N. Wylie Cranes, Bridge for overhead traveling. Crusbing-machine. J. E. Syvons Crutch attachment. K. D. Harding Cultivator, Subsoil. O. J. Springer Cultivator, Subsoil. O. J. Springer Cultivator, Wheeled. 2 pats. A. C. Lindgren Cultivator, A. W. Arnold Curtain-holder. P. Heffler Damper, Automatic. A. W. Arnold
Combination-lock. M. L. Hitchcock Concrete-mixing machine. H. J. J. Alexander Concrete structures. Form for building. D. M. Duller Container-closure. J. R. Harbock Controller-handle. F. E. Case Cooker, Steam. W. A. C. Murphy Core, Laminated transformer. O. Wiemer Corset. J. E. Doolittle Cotton-batting and product of the same. Manufacturing. E. W. Thomnson Cotton-chopper. S. Stallings Cotton from the boll, Apparatus for picking. C. C. Earle Cotton-gin. T. D. Fallon Counting apparatus. Thread. Crane, Jib. And L. Chronik Crane, Jib. H. N. Wylie Cranes, Bridge for overhead traveling. Crusbing-machine. J. E. Syvons Crutch attachment. K. D. Harding Cultivator, Subsoil. O. J. Springer Cultivator, Subsoil. O. J. Springer Cultivator, Wheeled. 2 pats. A. C. Lindgren Cultivator, A. W. Arnold Curtain-holder. P. Heffler Damper, Automatic. A. W. Arnold
Combination-lock
Container-closure. J. R. Harbeck Controller-handle. F. E. Case Cooker. Steam. W. A. C. Murphy Core. Laminated transformer. O. Wiemer Corset. J. E. Doolittle Cotton-batting and product of the same. Manufacturing. E. W. Thomnson Cotton-chopper. S. Stallings Cotton from the boll, Apparatus for nicking. C. C. Earle Cotton-gin. T. D. Fallon Counting apparatus. Thread. Crane. Jib. A. and L. Chronik Cranes. Rridge for overhead traveling. Crusbing-machine. J. E. Syrons Crusbing-machine. J. E. Syrons Crusbing-machine. J. E. Syrons Crushing-machine. J. E. Syrons Crutch attachment. K. D. Harding Cultivator attachment. J. O'Maley Cultivator, Subsoil. O. J. Springer Cultivator, Two-row. A. C. Lindgren Cultivator, Two-row. A. C. Lindgren Cultivator, Wheeled. 2 pats. A. C. Lindgren Cultivator, Wheeled. 2 pats. A. C. Lindgren Cultivator, Automatic. A. W. Arnold Chamber, Automatic. A. W. Arnold
Container-closure. J. R. Harbeck Controller-handle. F. E. Case Cooker. Steam. W. A. C. Murphy Core. Laminated transformer. O. Wiemer Corset. J. E. Doolittle Cotton-batting and product of the same. Manufacturing. E. W. Thomnson Cotton-chopper. S. Stallings Cotton from the boll, Apparatus for nicking. C. C. Earle Cotton-gin. T. D. Fallon Counting apparatus. Thread. Crane. Jib. A. and L. Chronik Cranes. Rridge for overhead traveling. Crusbing-machine. J. E. Syrons Crusbing-machine. J. E. Syrons Crusbing-machine. J. E. Syrons Crushing-machine. J. E. Syrons Crutch attachment. K. D. Harding Cultivator attachment. J. O'Maley Cultivator, Subsoil. O. J. Springer Cultivator, Two-row. A. C. Lindgren Cultivator, Two-row. A. C. Lindgren Cultivator, Wheeled. 2 pats. A. C. Lindgren Cultivator, Wheeled. 2 pats. A. C. Lindgren Cultivator, Automatic. A. W. Arnold Chamber, Automatic. A. W. Arnold
Container-closure. J. R. Harbeck Controller-handle. F. E. Case Cooker. Steam. W. A. C. Murphy Core. Laminated transformer. O. Wiemer Corset. J. E. Doolittle Cotton-batting and product of the same. Manufacturing. E. W. Thomnson Cotton-chopper. S. Stallings Cotton from the boll, Apparatus for nicking. C. C. Earle Cotton-gin. T. D. Fallon Counting apparatus. Thread. Crane. Jib. A. and L. Chronik Cranes. Rridge for overhead traveling. Crusbing-machine. J. E. Syrons Crusbing-machine. J. E. Syrons Crusbing-machine. J. E. Syrons Crushing-machine. J. E. Syrons Crutch attachment. K. D. Harding Cultivator attachment. J. O'Maley Cultivator, Subsoil. O. J. Springer Cultivator, Two-row. A. C. Lindgren Cultivator, Two-row. A. C. Lindgren Cultivator, Wheeled. 2 pats. A. C. Lindgren Cultivator, Wheeled. 2 pats. A. C. Lindgren Cultivator, Automatic. A. W. Arnold Chamber, Automatic. A. W. Arnold
Container-closure. J. R. Harbeck Controller-handle. F. E. Case Cooker. Steam. W. A. C. Murphy Core. Laminated transformer. O. Wiemer Corset. J. E. Doolittle Cotton-batting and product of the same. Manufacturing. E. W. Thomnson Cotton-chopper. S. Stallings Cotton from the boll, Apparatus for nicking. C. C. Earle Cotton-gin. T. D. Fallon Counting apparatus. Thread. Crane. Jib. A. and L. Chronik Cranes. Rridge for overhead traveling. Crusbing-machine. J. E. Syrons Crusbing-machine. J. E. Syrons Crusbing-machine. J. E. Syrons Crushing-machine. J. E. Syrons Crutch attachment. K. D. Harding Cultivator attachment. J. O'Maley Cultivator, Subsoil. O. J. Springer Cultivator, Two-row. A. C. Lindgren Cultivator, Two-row. A. C. Lindgren Cultivator, Wheeled. 2 pats. A. C. Lindgren Cultivator, Wheeled. 2 pats. A. C. Lindgren Cultivator, Automatic. A. W. Arnold Chamber, Automatic. A. W. Arnold
Crane, Jib. A. and L. Chronik Crane, Jib. H. N. Wylie Cranes, Bridge for overhead traveling. Crushing-machine J. E. Syrons Crutch attachment K. D. Harding Cultivator attachment J. O'Maley Cultivator, Subsoil O. J. Springer Cultivator, Two-row A. C. Lindgren Cultivator, Wheeled 2 pats A. C. Lindgren Cultivator, Wheel
Crane, Jib. A. and L. Chronik Crane, Jib. H. N. Wylie Cranes, Bridge for overhead traveling. Crushing-machine J. E. Syrons Crutch attachment K. D. Harding Cultivator attachment J. O'Maley Cultivator, Subsoil O. J. Springer Cultivator, Two-row A. C. Lindgren Cultivator, Wheeled 2 pats A. C. Lindgren Cultivator, Wheel
Crane, Jib. A. and L. Chronik Crane, Jib. H. N. Wylie Cranes, Bridge for overhead traveling. Crushing-machine J. E. Syrons Crutch attachment K. D. Harding Cultivator attachment J. O'Maley Cultivator, Subsoil O. J. Springer Cultivator, Two-row A. C. Lindgren Cultivator, Wheeled 2 pats A. C. Lindgren Cultivator, Wheel
Crane, Jib. A. and L. Chronik Crane, Jib. H. N. Wylie Cranes, Bridge for overhead traveling. Crushing-machine J. E. Syrons Crutch attachment K. D. Harding Cultivator attachment J. O'Maley Cultivator, Subsoil O. J. Springer Cultivator, Two-row A. C. Lindgren Cultivator, Wheeled 2 pats A. C. Lindgren Cultivator, Wheel
Crane, Jib. A. and L. Chronik Crane, Jib. H. N. Wylie Cranes, Bridge for overhead traveling. Crushing-machine J. E. Syrons Crutch attachment K. D. Harding Cultivator attachment J. O'Maley Cultivator, Subsoil O. J. Springer Cultivator, Two-row A. C. Lindgren Cultivator, Wheeled 2 pats A. C. Lindgren Cultivator, Wheel
Crane, Jib. A. and L. Chronik Crane, Jib. H. N. Wylie Cranes, Bridge for overhead traveling. Crushing-machine J. E. Syrons Crutch attachment K. D. Harding Cultivator attachment J. O'Maley Cultivator, Subsoil O. J. Springer Cultivator, Two-row A. C. Lindgren Cultivator, Wheeled 2 pats A. C. Lindgren Cultivator, Wheel
Crane, Jib. A. and L. Chronik Crane, Jib. H. N. Wylie Cranes, Bridge for overhead traveling. Crushing-machine J. E. Syrons Crutch attachment K. D. Harding Cultivator attachment J. O'Maley Cultivator, Subsoil O. J. Springer Cultivator, Two-row A. C. Lindgren Cultivator, Wheeled 2 pats A. C. Lindgren Cultivator, Wheel
Crane, Jib. A. and L. Chronik Crane, Jib. H. N. Wylie Cranes, Bridge for overhead traveling. Crushing-machine J. E. Syrons Crutch attachment K. D. Harding Cultivator attachment J. O'Maley Cultivator, Subsoil O. J. Springer Cultivator, Two-row A. C. Lindgren Cultivator, Wheeled 2 pats A. C. Lindgren Cultivator, Wheel
Crane, Jib. A. and L. Chronik Crane, Jib. H. N. Wylie Cranes, Bridge for overhead traveling. Crushing-machine J. E. Syrons Crutch attachment K. D. Harding Cultivator attachment J. O'Maley Cultivator, Subsoil O. J. Springer Cultivator, Two-row A. C. Lindgren Cultivator, Wheeled 2 pats A. C. Lindgren Cultivator, Wheel
Crane, Jib. A. and L. Chronik Crane, Jib. H. N. Wylie Cranes, Bridge for overhead traveling. Crushing-machine J. E. Syrons Crutch attachment K. D. Harding Cultivator attachment J. O'Maley Cultivator, Subsoil O. J. Springer Cultivator, Two-row A. C. Lindgren Cultivator, Wheeled 2 pats A. C. Lindgren Cultivator, Wheel
Crane, Jib. A. and L. Chronik Crane, Jib. H. N. Wylie Cranes, Bridge for overhead traveling. Crushing-machine J. E. Syrons Crutch attachment K. D. Harding Cultivator attachment J. O'Maley Cultivator, Subsoil O. J. Springer Cultivator, Two-row A. C. Lindgren Cultivator, Wheeled 2 pats A. C. Lindgren Cultivator, Wheel
Crane, Jib. A. and L. Chronik Crane, Jib. H. N. Wylie Cranes, Bridge for overhead traveling. Crushing-machine J. E. Syrons Crutch attachment K. D. Harding Cultivator attachment J. O'Maley Cultivator, Subsoil O. J. Springer Cultivator, Two-row A. C. Lindgren Cultivator, Wheeled 2 pats A. C. Lindgren Cultivator, Wheel
Crane, Jib. A. and L. Chronik Crane, Jib. H. N. Wylie Cranes, Bridge for overhead traveling. Crushing-machine J. E. Syrons Crutch attachment K. D. Harding Cultivator attachment J. O'Maley Cultivator, Subsoil O. J. Springer Cultivator, Two-row A. C. Lindgren Cultivator, Wheeled 2 pats A. C. Lindgren Cultivator, Wheel
Crane, Jib. A. and L. Chronik Crane, Jib. H. N. Wylie Cranes, Bridge for overhead traveling. Crushing-machine J. E. Syrons Crutch attachment K. D. Harding Cultivator attachment J. O'Maley Cultivator, Subsoil O. J. Springer Cultivator, Two-row A. C. Lindgren Cultivator, Wheeled 2 pats A. C. Lindgren Cultivator, Wheel
Crane, Jib. H. N. Wylie Cranes, Bridge for overhead traveling. Crusbing-machine. J. E. Svigons Crusch attachment. K. D. Harding Cultivator attachment. J. O'Malev Cultivator, Subsoil. O. J. Springer Cultivator, Two-row. A. C. Lindgren Cultivator, Wheeled. 2 pats. A. C. Lindgren Cultiva
Crane, Jib. H. N. Wylie Cranes, Bridge for overhead traveling. Crusbing-machine. J. E. Symons Crutch attachment. K. D. Harding Cultivator attachment. J. O'Maley Cultivator, Subsoil. O. J. Springer Cultivator, Two-row. A. C. Lindgren Cultivator, Wheeled. 2 pats. A. C. Lindgren Cultivat
Crusbing-machine. J. E. Srygons Crutch attachment. K. D. Harding Cultivator attachment. J. O'Maley Cultivator, Subsoil. O. J. Springer Cultivator, Two-row. A. C. Lindgren Cultivator, Wheeled. 2 pats. A. C. Lindgren Cultivator, Wheeled. 2 pats
Crusbing-machine. J. E. Srygons Crutch attachment. K. D. Harding Cultivator attachment. J. O'Maley Cultivator, Subsoil. O. J. Springer Cultivator, Two-row. A. C. Lindgren Cultivator, Wheeled. 2 pats. A. C. Lindgren Cultivator, Wheeled. 2 pats
Crusbing-machine. J. E. Syuons Groutch attachment. K. D. Harding Gl. Cultivator attachment. J. O'Maley Cultivator, Subsoil. O. J. Springer Cultivator, Two-row. A. C. Lindgren Cultivator, Wheeled. 2 pats. A. C. Lindgren Gl. Cultivator,
Crutch attachment
Cultivator attachment I. O'Malev Cultivator Subsoil O. J. Springer Cultivator, Subsoil O. J. Springer Cultivator, Two-row A. C. Lindgren Cultivator, Wheeled. 2 pats. A. C. Lindgren Cultvert-nine C. O. Wold Curtain-holder P. Heffler Damper, Automatic A. W. Arnold
Cultivator, Subsoil
Cultivator, Two-rowA. C. Lindgren Cultivator, Wheeled. 2 pats. A. C. Lindgren Culvert-nine
Cultivator, Two-rowA. C. Lindgren Cultivator, Wheeled. 2 pats. A. C. Lindgren Culvert-nine
Damper, Automatic W Arnold Gi
Damper, Automatic W Arnold Gi
Damper, Automatic W Arnold Gi
Damper, Automatic W Arnold G1
Contain the Gallery Contains the Armond Contains the Cont
transport to a special comment of

Desk attachment M. Teorie Desk-pad J. Gor
Die-holder, Adjustable, P. 1 (e
Door, Metal
Door suitable for closing opening it solds bulkheads and other purpess
Drag, grader and scraper, Road
Dust-collectors, Tubular go rd for
Egg and cream beater. D. Taylor
into steel
Emery-wheel dressers Attachment for
Engine gearing, Traction-gas. E. C. Grizzell
Engine igniter, Explosive P. Paulson Engines, Apparatus for starting motor-car or the like S. H. Boswell Engines, Compression-regulator for gas
Engines, Trip-lock for use in starting explosive. Eraser and pencil-sharpener, Combined H. E. Bryant
Excavating and conveying apparatus J. L. Potter Exchange-selector, Automatic.
Expansible bit. II. B. Holmes et al Explosive-engine I. J. I. Wood Extansion-table II. Without
Eyeglass-mounting . 3 pats W. R. Uhlemann Eyeglass-mounting (Reissue)G. A. Bader Fastenings, Machine for inserting metallic
Feed regulator, Boiler . K. Renbold Fence-stretcher . G. W. Hammond Fence, Woven-wire . I. I. Young Fences, Visible warning attachment for
barbed-wire
Fibrois labric
File Hocument. A. G. Clarke Filtering device. R. J. Schultz Fire-escape. C. B. McKinney Fire-governor. Automatic. A. W. Arnold Fire-pump governor. N. C. Locke Fireproof floor construction. H. L. Hinton Floor and laying same. Moisture-proof wood
Floor surfacer, cleaner and polisher
Floor surfacer, cleaner and polisher
Fly-escape for window-screensJ. Kress Flying-machineT. A. Fdison Flying-machineJ. W. Wilson
Fly-escape for window-screens. J. Kress Flying-machine. T. A. Edison Flying-machine. J. W. Wilson Flying-machine. P. R. Torbrand Folding machinery E. H. Cottrell Folding seat. M. Ackerman Folding table. G. S. Young Foot-support. A. D. French Formates and formic acid. Making.
Folding tableG. S. Young Foot-supportA. D. French Formates and formic acid, Making
Friction-coupling with expanding locking member. J. Thiry
Formates and formic acid, Making
Fuse-igniter. R. Conings Game apparatus. W. M. Gentle Game apparatus. H. C. General and
Game apparatus E. R. Ernst Game apparatus
Game apparatus
Casas Danifring black formers and
Gaseons mixtures, Means for measuring or analyzing. B. C. Hinman Gear mechanism, Transmission. R. W. Coffee Gearing, Safety yieldable. Gearing, Transmission. D. H. Haywood Gearing, Transmission. A. F. Osborn
Copyright Safety
Gearing, Safety yieldableE. M. Cobb Gearing, TransmissionD. H. Havwood Gearing, TransmissionA. E. Osborn Gearing, TransmissionC. A. Carlson et al Gearing, TransmissionC. A. Carlson Gearing, Variable-speed transmission
Gearings, Controlling mechanism for change-speed M. Lamort Glass-drawing apparatus
Glove
E I Dogova
Governing means for internal-combination engines
Grinding-machineL. N. Davis

Gronnd-connectorJ. L. Donald Hammock-snpport, FoldingH. Price Harness blind-fastenerT. J. Steen Harness draft attachment. W. W. Woodfill HarrowD. Polley HarrowW. J. Snow HarrowH. Hecht	(
Harrow. B. Policy Harrow. W. J. Snow Harrow, Lever. H. Hecht Harvester, Corn. L. E. Parsons	I
Hat-frame machineS. Mann	I
Hat sweat-bands, Composition For treating W. A. Kress Hat-ventilator. J. M. Davies Hay-fork. J. A. Miller et al Hay-loader attachment. A. B. Jones Hay-press attachment. B. Kingman Hay-press attachment. B. H. Ouick	I I
Hoot Apparatus for the interchange of	1
	I
Heating boiler, House. M. F. Kenely Heddle-making machine. W. Fehr et al Heel-protector. R. J. Dearborn Hide-treating apparatus. C. J. Glasel Hinge. S. S. Matthes Hinge, Blind. J. A. Poirier	l I
Hinge, BlindJ. A. Poirier Hitching and releasing device. J. Meikle Horn-supporting craneH. Sheble]
Hinge, Blind. J. A. Poirier Illitching and releasing device. J. Meikle Horn-supporting crane. H. Sheble Horse, Adjustable. C. Kamrath Horseshoe. J. H. Penhorwood Horseshoe, Detachable. H. P. Wendell Horseshoe with exchangeable calk. I. Roschmann Hub-fastener A. E. Roxberg Husking-roll C. C. Crum]
Hub-fastener. A. E. Roxberg	I
Husking-roll. C. C. Crum Ice-cream machine. F. P. Miller Ice-crushing implement. C. Waldvogel Igniter. Pocket. H. F. Jones Igniter, Pocket. L. Schon Insect-trap, especially for files. E. Bohm	ĺ
Igniter, Pocket. L. Schon Insect-trap, especially for flies. E. Bohm Internal-combustion engine.]
Insect-trap, especially for files. E. Bonn Internal-combustion engine]
Knives, Scale-fastening for pocketA. L. Orchard Knobs to roses, Securing thumb	1
Knockdown seat. W. A. Kirkpatrick et al Ladder, Double-wheeled step. C. G. Davis]
Lamp-bracket]
Ladder, Double-wheeled step. C. G. Bavis Ladder, Step	I
R. B. Benjamin Lamp-igniter. W. D. Jones Lamp-stem centering and drawing tool. Incandescent. R. K. Mickey Lantern. W. S. Hamm	I
candescent R. K. Mickey Lantern W. S. Hamm Latch M. R. Stoddard	I
Latch. M. R. Stoddard Latch, Door. W. Schumacher Lawn-trimming implement. W. S. S. Fleming Leather with india-rubber, Treatment of.]
Leasther with india-rubber, Treatment of A. McLennan Leas-grinding machineR. F. Williams]
Leather with india-rubber, Treatment of. A. McLennan Lens-grinding machineR. F. Williams Level] {
Lightning-conductor F. Redmond Lightning-protector A. F. Rosenberger Lock H. M. Leese]
Locks, Safety device for automatically-locking]
C. J. Lundstrom Locomotive]
Loom filling-feeder. J. Robinson Loom. Pile-fabric. J. Buckler Loom-shuttle. F. H. Stetson Loom-shuttle spindle. H. L. Litchfield]
jacquards employed in automatic weft- replenishing]
Looms, Weft-replenishing mechanism for weft-replenishing. H. Wyman Machine element. C. A. Carlson Mail-bag catching and delivering apparatus]
**************************************	6
Mail-box support, Extensible A. J. Wilfong Mailing-folder	6
Manifolding device. W. B. Nagle Manifolding-pad. T. W. Old Manifolding-pad. E. K. Bottle	1
Manure, Treatment ofW. Hoskins Measuring apparatusJ. Sullivan et al Measuring the flow of fluidsJ. B. Speed	
Meat-chopper	
grade, ProducingL. A. Leonard et al Metals, Elimination ofG. H. Clamer Metals, Process of and means for deposit-	
Motor chalf	
Milk-top remover. E. A. Simms Milk. Treating .2 pats S. R. Kennedy Mining coal H. A. Kuhn Mirror-support R. H. Miller	
Mount for entomological specimens. F. Teute Mower-wheel J. H. Auble et al Music-leaf turner, Automatic A. J. Swanson Music-sheets for mechanical piano-players,	
&c., Apparatus for producing	
Musical instruments, Tailpiece for stringedG. D. Laurian	
Nail-setterJ. C. Gates Needles, Carriage for tuft-yarnJ. A. Clark	
Music-sheets for mechanical piano-players, &c. Apparatus for producing	
II. ILOUCIUS	

OvenL. R. Holbrook
Ontlet-box cover, Electrical
OvenL. R. Holbrook Dils, Manufacture of Inbrieating A. De Hemptinne Ontlet-box cover, Electrical E. H. Freeman Padlock, KeylessG. W. Eddy Padlock, Pivotal-shackle permutation
Data Control of the Strategy
Penholder
Photographic-plate holders, Exposure-iudicator for O. Halle Photographic-printing machine
Picker-stick
Panel-board cut-out and distributing mechanism. R. H. Olley Pen, Drawing. J. Pamer Penholder. T. C. Spencer Photographer's extension-rack. P. M. Grandperrin Photographic-plate holders, Exposure-iudicator for. O. Halle Photographic-printing machine. Photographic-printing machine. G. R. Olson et al Picker-stick. T. F. Arzt Picture-exhibitor. B. Phelps Picture film-reel mechanism, Motion. W. B. Swindell Picture films, Apparatus for priuting moving. F. L. Dyer et al Picture-films, Coating. F. B. Thompson Pictures or characters, Apparatus for re- producing. G. E. Hoglund Pictures, Screen for displaying projected. M. Ganzini
M. Ganzini Pipe-machine. W. Barnett Pipe-wrench. J. F. Tiner Pipe-wrench. A. L. Melchert Pipcs, shafts, &c., Coupling for
Pipes, shafts, &c., Coupling forA. H. Ne'ler Pistol. AutomaticH. Rosier PitmanJ. T. Kilby Planters, Gage-lifting attachment for corn-
Planters, Gage-lifting attachment for corn- V. C. Bowser PlotterG. H. Grove
Plotter
ing J. H. Ketcheson et al Post J. P. Quinn Post-mold J. P. Quinn Post-mold G. H. Fenske Poultry-hook. F. B. Lewis, Jr. Power in precooling plants, Apparatus for economizing. A. Faget Power mechanism T. R. Cook Power-transmission mechanism T. C. Dill mechanism C. D. McClintock Power-transmitting mechanism S. H. Rickard Presser-foot mechanism E. E. Winkley Pressure-regulating apparatus
economizing
Power-transmitting mechanism
Presser-foot mechanismE. E. Winkley
Printing-machine
Presser-foot mechanism E. E. Winkley Pressure-regulating apparatus
Printing-rollers, Making engravedJ. W. Ippers Printing-rollers, ManufacturingC. Jaek
Propelling and driving mechanism J. Cervelli Pulley-block
Printing-rollers, Making engraved. J. W. Ippers Printing-rollers, Manufacturing. C. Jaek Propelling and driving mechanism J. Cervelli Pulley-block. C. Andersou Pump, Hydropneumatic. J. B. Garber Quicksilver apparatus. I. Hageman Radiator, Stove or furnace. F. Fiebeger Rail-joint, Insulated. E. C. Zimmerman Rail-joints, Means of forming. H. G. Gillmor Railway, Electric. G. P. Horton Railway power trausmission. A. S. Parsons Railway switch mechanism. G. P. Seagraves Razor-strop. M. A. Mihills Receptacle-closure. C. F. Jenkins Reel. A. F. Rietzel Reel-cradle. H. B. Carter Refrigerator-lining. W. H. Whittier Rivets, Making. D. G. Clark Rolling-mill plant. H. Jack
Rail-joints, Means of forming. H. G. Gillmor Railway, ElectricG. P. Horton
Railway switch mechanism
Receptacle-closure. C. F. Jenkins Reel. A. F. Rietzel Reel-cradle
Refrigerator-liningW. H. Whittier Rivets, MakingD. G. Clark Rolling-mill plantH. Jack
Rotary press. J. W. R. von Traubenberg
Sash construction, MetalW. R. Kinnear
Sash-lockT. N. Jones Sash-lockT. N. Jones Scraper, RoadG. W. Spicer Screen-rollerJ. D. Augsberger Screw-clampL. S. Starrett Seal for car-doors, shipping receptacles, &c.
Concerns and making the game
Seat structure, Spring. L. A. Young Sewing-machine. F. A. Pottnam et al
Sewing-machine folder. A. H. De Voe Shade-holder. J. H. Dale Shade or curtain bracket, Adjustable. W. E. Severin
Shaft-coupling C. A. Carlson Shafting, Flexible R. Abell Shaving-appliance case W. L. Clark Shaving-cup C. Arnone Shingle, Metallic H. M. Clemmer Ships, Collision shock-absorber for J. Patronaggio Shock-absorber J. H. Sager Shuttle, Metallic G. Cuthbert et al
Shaving-cup
Shock-absorberJ. H. Sager Shuttle, MetallicG. Cuthbert et al Signal-boxF. W. Cole
Signal-box. F. W. Cole Skewer-finishing machine. A. T. True Skirt-supporter (Reissne). N. C. Edwards Slasher-head and coupling. F. W. Gebott Sleigh-runner for wheeled vehicles.
Slicing-machineF. P. Burkhardt Smoke and fume consuming apparatus
Smoke separator and purifier
Slasher-head and couplingF. W. Gebott Sleigh-runner for wheeled vehicles L. Beffel Slicing-machineF. P. Bnrkhardt Smoke and fume consuming apparatus V. E. Lombard Smoke separator and purifier V. E. Lombard Smoothing-ironS. G. Buskard Soap coutainer and dispenser, Pulverized. F. J. Dunwoody Soap-dishJ. S. Frey
Soap-dishJ. S. Frey Soldering chain-linksR. Kunzmann et al Sound-records, Method and apparatus for makingT. A. Edison

Soldering-iron, Gasolene Spinal affections, Appliance ofJ. Spinning, doubling and twisti	.C. Oldenberg for treatment W. Battershall
Spool and work holder	Z. de Ferranti K. Culver
Spring-wheel	G. E. FriesenA. KneipG. D. Eddy
Spring-wheel Sputnm-cnp Square, scratch-gage and con nation T Square, T Stacker, Pneumatic. Stain or grease removing dev	F. J. O'Neill V. Krajicek .F. L. Ruddell
Stain or grease removing dev Stalk-cutter	ice
Stalk-cutter	r webs O. Kruger .H. L. Keeler
Stereontieen Discolving	A D Smith
Stirrup. Stitch-removing deviceE. StokerW. I Stoker, Mechanical. Stone blocks, Knockdown	F. M. Swart B. McGilvary I. H. Stinemau
Stone blocks, Knockdown forming artificial Stove and furnace grate	apparatus forW. Lake
Stone blocks, Knockdown forming artificial. Stove and furnace grate Stove, Hot-blast. Strainer, Oil. Stretcher for hospital and ot W. Stuffing-box for roller-shafts. Suction-box Suky, Trotting Suspender. Suspender attachment.	R. S. MooreJ. T. Bond her purposes.
Stuffing-box for roller-shafts. Suction-boxD. Sulky. TrottingG	H. Schwarz S. Zimmerman W. Hubbard
Suspender Suspender attachment Table	.C. A. Lations H. H. Kramer J. Morris
Table-pad. Tagging machine, Lanndry Taximeter Taximeter frand-preventive	E. W. Rice T. W. Post
Snspender attachment. Table-pad. Table-pad. Tagging machine, Lanndry Taximeter frand-preventive Telegraph system, Fire-alari Telegraph system, Fire and	T. W. Post
Telegraph system, Fire and Telephone system, Private communicating. J. N. Telephony, Wireless. Telescopes, Centering-pin cap Tent, Knockdown. M. Threshing-machine Threshing-machine baud-cut Tire, Vehicle V. Tobacco-pipe.	F. W. Cole -branch inter- Wallace et al
Telescopes, Centering-pin cap Tent, Knockdown	o for
Threshing-machine Threshing-machine baud-cut	ter
Tool Combination	C E Douglow
Toy and game apparatus J. V Toy flying-machineI. W. H Toy gun W Trace-fastener. Traction-engine. Train-order-delivery apparatu	V. Cadwallader Inmphrey et al 7. R. Benjamin
Traction-engine Traction-engine Train-order-delivery apparate Train-order holder.	B. Holt
Transom-adjusting device	F. F. Smith
Trolley. Trolley-harp. R. Truck, Hand. Truck, Motor-car	D. BlackstoneF. P. BrownM. Albrecht
Trnck, Motor-car. Trnck side frame, Car Tubes, Machine for inserting in Tubing	C. A. Schröyer g nuts or disks C. Vallone et al
In Tubing. Tumbling-barrel. Tunnels, Waterproofing Turbine and regulating n (Reissue) Turn-table Type-setting machine. Type-writing machine. Type-writing machine	.G. E. Abbott .H. A. Carson neans therefor
(Reissue) Trype-setting machine Trype-writing machine	E. F. Smith H. Drewell R. W. Uhlig
Type-writing machine Umbrella. Umbrella-support	C. Hellstrom T. M. Sura A. Pranke
Type-writing machine. Umbrella Umbrella-support. Vacuum-cleaners, Dust-colle F. Valve. Valve-actuating rod Valve and valve-gear for in	W. Smith, Jr. W. Corliss
Valve and valve-gear for in tion engines. Valve for hydrants, Sprinkli Valve, High-pressure gate. Valve mechanism and gove	nternal-combusG. H. Mann ng. J. B. Heim
Valva machanism Flush	r. P. Raudorph I H Davis
Vehicle, Child's	M. Pettit et al W. Cummings C. A. Meredith
Vending-machine, Coin Vest and suspenders, Comb	A. Coseglia ined
Wagon, DumpingI Washboiler	F. N. Cronholm I. B. Hemphill ombined
Water-power plants, Supply	system forC. F. Clark
Wedd-destroyer. Weighing-machine. Well-boring machine.	H. Thoeni .J. M. Chappel .P. A. Bouchet
Vending-machine, Coin Vest and suspenders, Comb Wagon, Dumping. I Washboiler E Water cooler and filter, Co Water-power plants, Supply Weather-strip Weed-destroyer Weighing-machine Well-boring machine Well-easings, Shoe-guide fo Welt-attaching apparatus. Wheel Wheel Wheel support, VehieleP	.A. C. Graham G. Goddu W. L. Dodd
Wheel Wheel support, VehieleP Whip-socketJ Whip-socket lock WindowsWindow Window Window eleanerF Window elosure, Self-lockin Window-fixtureJ.	.K. K. Strube J. MacConnell J. S. Stevenson
whip-socket lock. Windlass. C Window. Window	D. Andrade, Jr. C. R. Biel C. S. E. Cibulas
Window-cleaner	P. C. Sehwalen g ticket J. M. Gamble
Window-fixtureJ. Wire fabric Wire-fastenerW. Wire mat	C. Kramer, Jr.

Wire-stitcher
Wasdanufasing washing V. C. de Ybarrondo
Wood-surfacing machineJ. W. Bell
Woodworking machine, Universal
A, C. Getz
Work-holder
Work-snpport E. Fagan
WrenchO. Stenerson
WrenchP. M. Clark
Yoke center, NeckS. A. Steadman
Yokes and vehicle-tongnes, Coupling for
neckD. S. Dillenback

DESIGNS.

Coffee-counterF. F. Wear
Fabric, TextileS. L. Crownfield
Fabric, Textile
Fahric, Textile
Fabric, Textile E. Sins
Hat-pinS. O. Bigney
Jewelry ornament
Lamp-shade
Light shade, Artificial
RugJ. Merry
RugW. G. Reith
Rug
RugJ. H. Witzel
Shade
Spoon, fork or similar articleJ. R. Dean
Stove

Issued September 27, 1910.

MECHANICAL PATENTS.
Accetylene-generatorC. W. Beck Advertising or amusement device. W. Story
Aeroplane W. H. Fanber
Air-compressing apparatus. L. B. De Camp Air for use in metallurgical processes,
Advertising of amusement devices. W. stott Aerial machine L. E. Clawson Aeroplane
Airship. D. Hillis Ammonia, Production of. F. Haber et al
Apparel, Oruamenting wearingJ. Luner Automobile-hornL. B. Buchanan
Apparel, Oruamenting wearing. J. Luner Antomobile-horn. L. B. Buchanan Automobile-radiator. F. G. Garrison Automobiles, Muffler cut-ont for
Bag O. A. Lehman Balers, Spring and power pull-back for hav
Baling-presses, Spring and power pull-back for. G. Schubert Ball-mill or comminnter plate. H. D. Hibbard Ball-mill plate. J. M. Sherrerd Band-brake. B. B. Bachman Barrel, Metal. W. B. Goddard Bearing, Wheel. L. S. Strepey Bcater and scraper, Flexible. J. W. Kohlhepp Bcd, Invalid. J. M. Keller Bed, Window. L. P. Armstroug Bedstead, Folding. E. L. Elliott et al
Ball-mill plateJ. M. Sherrerd Band-brakeB. B. Bachman
Barrel, Metal. W. B. Goddard Bearing, Wheel. L. S. Strepey
Beater and scraper, FlexibleJ. W. Kohlhepp
Bcd, Invalid J. M. Keller Bed, Window L. P. Armstroug
Bedstead, Folding. E. L. Elliott et al Beet-digger. A. Clark
Bill. J. C. Bell
Binder, Temporary
Boat, HydroplaneW. H. Fauber Boiler F. W. Meyer
Book or pad, Triplicate manifolding F. J. Krueger
Bed, Window. L. P. Armstroug Bedstead, Folding. E. L. Elliott et al Beet-digger. A. Clark Belt for windows, Safety. M. Miller Bill. J. C. Bell Binder, Loose-leaf. J. N. Larsen Binder, Temporary. C. D. Graves Blasting-pulg. F. A. Goodrow et al Boat, Hydroplane. W. H. Fauber Boiler. F. W. Meyer Book or pad, Triplicate manifolding. F. J. Krueger Book, Record. B. W. Mulkey Bookbinding, Temporary. C. F. McBee Bottle, Non-refillable. L. G. Gugnon Bottle-rinsing machine. L. Weiscopf Box-making apparatus. L. D. Lewis Braiding-machine. R. C. Rahm
Bottle, Non-refillableL. G. Gugnon Bottle-rinsing machineL. Weiscopf
Box-making apparatus L. D. Lewis Braiding-machine R. C. Rahm Brakes, Pressure-regulator for automatic
Brakes, Pressure-regulator for automatic J. E. A. Michel
J. E. A. Michel Broom. G. Dieckmann Brush. L. H. Pfleghardt Building-block machine. H. Pocock
Building constructionT. J. George Cameras, Positioning and focusing indicator
for enlarging and reducingA. Fruwirth Can-body making machineO. J. Johnson
Can cover, Ice-creamM. Mansor Can lock, MilkJ. F. Billy
Can spout, PowderD. Locandro Candy-machineF. H. Woolf
Car connection, ElectricJ. V. Doyle Car door, Flush-closing freight
Car, Logging. W. T. Harding
Car, TankL. E. Allyn Cars. Signal-bell-cord hanger for
Carbureter. A. H. Marden Carbureter. E. J. Gulick
Building construction
Cartalytic body and making same
Chandelier for gas lamps C. W. Levalley
Chatelaine-bag
Check-identifying machineF. Hoffman
Churn and butter-worker, Combined
Churn. J. N. Nall Churn and butter-worker, Combined L. A. Disbrow Churns, Butter-collecting appliance for
Churns, Butter-collecting appliance for S. Hartmann Cigarette and eigar holder J. D. Eteheverry et al Circuit-breaker F. C. Sessions Clamber Cloek, Watchman's . 2 pats Cloth-stretching machine Clothes-boiler V. A. Smith Clothes-washer J. W. Whitely
Circuit-breakerF. L. Sessions ClampF. C. Gillitt
Clock, Watchman's2 patsR. C. Rose Cloth-stretching machineG. Durrant
Clothes-boilerV. A. Smith Clothes-washerJ. W. Whitely

THE INVENTIVE AGE.

Clutch, Friction disk
Coffee-mill. J. W. Sliger Coin-holder. F. G. Shuman Coke-furnace. W. Mueller
Collar for decoy-ducks J. Micka Collar holder or retainer . A. L. A. Biddeloo
Condenser Steam H L Brandon
Condensers, Apparatus for removing gases and vapors from surface. E. Josse et al
Coru-popper. A. Danisou Counter-guard bracket. J. B. Monette Coupling. B. F. Sparr
Crate, FoldingF. D. Brockman et al Crib-hookR. Luke Cue-tipE. Lamprecht
Culvert, Corrugated metalJ. R. Orwig Culvert, RoadW. F. Looker CurrycombJ. S. Campbell
Curtain-ring. E. Gilmore Cutting mechanism. E. W. Cooper Cutting-tools, Adjustable reversing attach-
ment and feed forJ. H. Gebhardt Cycle. MotorF. F. Bingham Cylinders, Controlling mechanism for work-
Damper, Air-pipeW. Leo et al Delivery mechanismW. Scott Dental instrumentJ. L. Kelly
Differential-speed motorH. A. Rhodes Display-rackW. H. Crane Distillation system, WaterA. Faget
Door-lock
Door-lock, MortiseD. W. Weed Draft deviceT. S. Moffett Drag, RoadF. Boeckmann
Drawing-table, AdjustableG. A. Schnorr Drill-braceJ. S. Glenn Driving mechanismJ. Duitch
Coru-popper. A. Danisou Counter-guard bracket. J. B. Monette Coupling. B. F. Sparr Crate, Folding. F. D. Brockmann et al Crib-hook. R. Luke Cue-tip. E. Lamprecht Cultivator, Whceled hand. R. H. Dubourg Culvert, Corrugated metal. J. R. Orwig Culvert, Corrugated metal. J. R. Orwig Culvert, Road. W. F. Looker Currycomb. J. S. Campbell Curtain-ring. E. Gilmore Cutting mechanism. E. W. Cooper Cutting-tools, Adjustable reversing attachment and feed for. J. H. Gebhardt Cycle. Motor. F. F. Bingham Cylinders, Controlling mechanism for working. H. C. Randall Damper, Air-pipe. W. Leo et al Delivery mechanism. W. Scott Dental instrument. J. L. Kelly Differential-speed motor. H. A. Rhodes Display-rack. W. H. Crane Distillation system, Water. A. Faget Dolomite, Treating. J. J. Gathy Door-lock. S. Schacht Door-lock, Entrance. A. Arens Door-lock, Entrance. A. Arens Door-lock, Kortise. D. W. Weed Draft device. T. S. Moffert Drag, Road. F. Boeckmann Drawing-table, Adjustable. G. A. Schnorr Drill-brace. J. S. Glenn Driving mechanism. J. Duitch Drying-machine. 2 pats. T. F. Dexter Dust-collector. F. J. Matchette Dust-remover. H. J. S. Lewis et al Dye, Bluish-gray vat. P. Thomaschewski et al
Dye, Brown vat. P. Thomaschewski et al Dye, Trisazo. 2 pats A. Blank et al
Educational appliance. L. T. Freeman, Sr. Electric-conduit fitting W. C. Robinson Electric-drop-light fixture, Adjustable
Electric-light-globe holder A. I. Chandler Electric light, Portable J. Block Electric-light support T. Gray
Dust-remover
Engine cooling device, Internal-combustion R. B. Vaughn Engine igniter, Gas or other internal-com-
Engine muffler, Internal-combustion
Engine regulating apparatus. C. H. Smoot Engine starter, Internal-combustion D. S. Anthony Engines, Transmission and steering mechanism for traction. R. W. Peterson et al
anism for traction. R. W. Peterson et al Envelop. Safety
thereof A. M. Cox Evaporator J. E. Dunn Evaporator feeding device 2 pats
Evaporator
Eyeglass connectionC. Billington Facial lines and defects, Device for removingE. Hannig
ing . E. Hannig Faucet . S. A. Dennis Faucet-closing device A. E. Redlich Faucet, Glue C. M. Zimmerman
Feed-water regulator, Boiler
W. J. Adams Fiber-yielding materials, Reducing. G. H. Marshall Filament, Metallic. Filament, Metallic incandescent.
A. Lederer
Filing device, Credit-accountW. Eacrett Finger-protectorM. L. B. Ward
Fire-extinguisher system, Automatic T. J. Stankiewicz Fire-extinguishers. Chemical-fank for
Files and the like, Machine for cutting J. Neill Filing device, Credit-accountW. Eacrett Finger-protectorM. L. B. Ward Fire-escapeG. H. Johnson Fire-extinguisher system, Automatic T. J. Stankiewicz Fire-extinguishers, Chemical-tank for J. T. Lally Firearm-mufflerA. C. Shipley Firearm-sightH. L. Lovejoy Fish-screen and sluice-boxA. J. Collar Flax, RettingP. Riva
Fish-screen and sluice-box. A. J. Collar Flax, Retting. P. Riva Floor-covering holder. D. Wolcott Floor-dressing machine G. F. Hall
Flax. Retting
Flying-machine
Fiving-machine. M. Ackerman Folding box and crate.
Furnace-casing. W. F. Hansen Furnace-door. G. de Grahl Furnace-grate A. Baillot et al
Furnace-grate A. Baillot et al Furnaces, Tapping element for melting H. L. Hartenstein Fuse-mounting W. Merz Game apparatus S. E. Creasey

Game apparatus	Peall
J. M. S Garment, StormJ. V. I	tivers Benoit
Game apparatus	et al arver
Gas-burner for heating purposesG. B. D.	amon
Gas-cleaning apparatusD. S. An Gas-controllerF. E. Y	thony oungs
Gas-producer2 patsW. B. H Gaseous-fluid mixerH. W. Webb	ughes et al
Governor, EngiueC. B. Ed Grain-heater agitatorA. J. Ko	wards pegler
Grain-heater agitatorF. A. W Grain-heaters, Device for regulating	enger the
Grape, &c., picker	enger reitag
Grates, Heating attachment for open	IcCall Kino
Grinding-machineW. J.	Bell
Hammer-drillA. H. T	aylor
Harrow H. A. We	tmore
Harvester and other comb-machine, per R. B. Do	Strip- iglass
Harvester, windrow attachment, Bec. A .	et Clark
Hat-fastener, Lady'sA. Hat-flanging machineA. B. W	Reim aring
Hat-pin holderG. C. B Hay-forkW. S. Thor	assett npson
Headlight, VehicleB. R. HeaterA. H. M.	Gover I errill
Heater and radiator, Combined E. V. Bo	entley
Heating apparatusJ. A. An Heating systemP. F. Wullsel	alirall hleger
Heating system. Steam. A. G. Heating unit, Electric	Paul Aller
swelling and tanningA	iring. Fay
Hinge, Spring	et al oinson
Holst-brake and clutch adjuster, Auto	Herr
Horizon, ArtificialJ. W.	Gillie
Horseshoe attachmentN. A. B. McCo	ender
Hydrograp Producing A Maggarge	e, Sr.
Incubator	arker Jorrill
IndicatorT. G. L	eavell
Induction-motor, Synchronous. C. A. luk for ceramic transfer-pictures	Lohr
J. Kas Insect collector and destroyer, W. J.	sseker Greer
Insulator, MineC. W. Spea Ironing-tableJ. W.	kman
Journal-brassH. J. Key-lever cupK.	Small
Keyhole-guardG. M. Du KeyboardF. Cl	nlevy
Keyhole-guardG. M. Dr KeyboardF. Cl Kneading and mixing machineJ. Knife or tool for tapping rubber and	inlevy utsam Lips other
Keyhole-guardG. M. Du KeyboardF. Cl Kneading and mixing machineJ. Knife or tool for tapping rubber and gum treesR. W. Cater Label-applying machineH. F. M	unlevy utsam Lips other et al
Keyhole-guard. G. M. Dr. Keyhoard. F. Cl. Kneading and mixing machine. J. Knife or tool for tapping rubber and gum trees. R. W. Cater Label-applying machine. H. F. M. Lamp. F. M. St. Lamp and lantern extinguisher. B. K.	inlevy utsam Lips other et al aynes evens
Keyhole-guard. G. M. Dr. Keyboard. F. Cl. Kuending and mixing machine. J. Knife or tool for tapping rubber and gum trees. R. W. Cater Label-applying machine. H. F. M. Lamp. F. M. St. Lamp and lantern extinguisher. B. K. Lamp. Berth. W. J. L. Lamp-holder. O.	ultery utsam Lips other et al aynes evens evens evacie Bohan Krug
Indicator	unlevy utsam Lips other et al aynes eevens ovacie Bohan Krug ederer
Keyhole-guard. G. M. Dr. Keyhoard. F. Cl. Kuending and mixing machine. J. Knife or tool for tapping rubber and gum trees. R. W. Cater Label-applying machine. H. F. M. Lamp. F. M. St. Lamp and lantern extinguisher. B. K. Lamp. Berth. W. J. Lamp-holder. O. Lamp. Incandescent electric. A. L. Lanns, Heater attachment for gas. Land-extractor. C. H. Lard-extractor. C. H.	unlevy utsam Lips other et al faynes evens ovacie Bohan Krug ederer Bloom fewitter
Keyhole-guard. G. M. Dr. Keyhoard. F. Cl. Kneading and mixing machineJ. Knife or tool for tapping rubber and gum trees. R. W. Cater Label-applying machine. H. F. M. Lamp. F. M. St. Lamp and lantern extinguisher. B. K. Lamp. Berth. W. J. I. Lamp. Holder. O. Lamp, Incandescent electric. A. Le Lamps, Heater attachment for gas. Lantern-holder. A. C. E. Lard-extractor. C. H. Lasts, Latch for hinged. F. W. Kittl Lathe. G. O. G.	unlevy utsam Lips other et al aynes sevens ovacic Bohan Krug ederer Bloom Iewitt Ritter linger ridley
Keyhole-guard. G. M. Dr. Keyboard. F. Cl. Kneading and mixing machine. J. Knife or tool for tapping rubber and gum trees. R. W. Cater Label-applying machine. H. F. M. Lamp. F. M. St. Lamp and lantern extinguisher. B. K. Lamp, Berth. W. J. J. Lamp-holder. O. Lamp, Incandescent electric. A. L. Lainps, Heater attachment for gas. H. F. Lantern-holder. A. C. B. Lard-extractor. C. H. Lasts, Latch for hinged. F. W. Kitt Lathe. G. O. G. Lathes, Relieving attachment for. E. W. Blum	unlevy utsam Lips other et al aynes tevens boyacic Bohan Krug ederer Bloom Iewitt Ritter linger ridley
Keyhole-guard. G. M. Dr. Keyhoard. F. Cl. Kneading and mixing machine. J. Knife or tool for tapping rubber and gum trees. R. W. Cater Label-applying machine. H. F. M. Lamp. F. M. St. Lamp and lantern extinguisher. B. K. Lamp. Berth. W. J. Lamp. Holder. O. Lamp. Incandescent electric. A. Le Lamps, Heater attachment for gas. H. F. Lantern-holder. A. C. E. Lard-extractor. C. H. Lasts, Latch for hinged. F. W. Kitt Lathe. G. O. G. Lathes, Relieving attachment for . E. W. Blum Leather-working machinery, Sprayin vice for. J. Elderkin	unlevy utsam Lips other et al faynes eevens ovacie Bohan Krug ederer Lloom Hewitt Ritter linger ridley et al g de- et al
Keyhole-guard. G. M. Dr. Keyhoard. F. Cl. Kneading and mixing machine. J. Knife or tool for tapping rubber and gum trees. R. W. Cater Label-applying machine. H. F. M. Lamp. F. M. St. Lamp and lantern extinguisher. B. K. Lamp. Berth. W. J. Lampholder. O. Lamp, Incandescent electric. A. Le Lamps, Heater attachment for gas. H. F. Lantern-holder. A. C. E. Lard-extractor. C. H. Lasts, Latch for hinged. F. W. Kitt Lathe. G. O. G. Lathes, Relieving attachment for. E. W. Blum Leather-working machinery, Sprayin vice for. J. Elderkin Level, Adjustable. H. A. E. Life-saving apparatus. J. A. Jak	unlevy utsam Lips other et al aynes tevens boyacic Bohan Krug ederer Bloom Jewitt Ritter ridley et al g de- et al s. Coy obsen
Keyhole-guard. G. M. Dr. Keyhoard. F. Cl. Kneading and mixing machine. J. Knife or tool for tapping rubber and gum trees. R. W. Cater Label-applying machine. H. F. M. Lamp. F. M. St. Lamp and lantern extinguisher. B. K. Lamp. Berth. W. J. J. Lamp. Hoolder. O. Lamp. Incandescent electric. A. Le Lamps, Heater attachment for gas. H. F. Lantern-holder. A. C. E. Lard-extractor. C. H. Lasts, Latch for hinged. F. W. Kitt Lathe. G. O. G. Lathes, Relieving attachment for Leather-working machinery, Sprayin vice for. J. Elderkin Level. Adjustable. H. A. E. Lift-saving apparatus. J. A. Jak Lifting-jack appliance. A. W. Sall	unlevy utsam Lips other et al faynes eevens ovacie Bohan Krug ederer Hewitt Ritter linger ridley et al g de- et al coy obsen et al ander
Keyhole-guard. G. M. Dr. Keyhoard. F. Cl. Kneading and mixing machine. J. Knife or tool for tapping rubber and gum trees. R. W. Cater Label-applying machine. H. F. M. Lamp. F. M. St. Lamp and lantern extinguisher. B. K. Lamp. Berth. W. J. J. Lampholder. O. Lamp, Incandescent electric. A. L. Lamps, Heater attachment for gas. H. F. L. Lard-extractor. C. H. Lasts, Latch for hinged. F. W. Kitt Lathe. G. O. G. Lathes, Relieving attachment for. E. W. Blum Leather-working machinery, Sprayin vice for J. Elderkin Level, Adjustable. H. A. E. Life-saving apparatus. J. A. Jak Lifting-jack. C. E. Loetzer Lifting-jack appliance. A. W. Sall Light-striker. R. von Hc Liquid-concentrating apparatus. P. Ke	unlevy utsam Lips other et al aynes eevens bovacic Bohan Krug ederer Bloom Jewitt Ritter linger ridley et al g de- et al c Coy obsen et al ander rovath estner
Keyhole-guard. G. M. Dr. Keyhoard. F. Cl. Kneading and mixing machine. J. Knife or tool for tapping rubber and gum trees. R. W. Cater Label-applying machine. H. F. M. Lamp. F. M. St. Lamp and lantern extinguisher. B. K. Lamp Berth. W. J. Lamp. Heater extinguisher. C. L. Lamp. Heater attachment for gas. H. F. Lantern-holder. A. C. E. Lard-extractor. C. H. Lasts, Latch for hinged. F. W. Kitt Lathe. G. O. G. Lathes, Relieving attachment for E. W. Blum Leather-working machinery, Sprayin vice for. J. Elderkin Level. Adjustable. H. A. E. Life-saving apparatus. J. A. Jak Lifting-jack appliance. A. W. Sall Light-striker. R. von Hc Liquid-concentrating apparatus. P. Kel Locklept. S. Ef	unlevy utsam Lips other et al faynes evens evens evenes byacie Bohan Krug ederer linger ridley ct al ct coy obsen et al ander rryath ander rryath faritus fantin
Keyhole-guard. G. M. Dr. Keyhoard. F. Cl. Kneading and mixing machine. J. Knife or tool for tapping rubber and gum trees. R. W. Cater Label-applying machine. H. F. M. Lamp. F. M. St. Lamp and lantern extinguisher. B. K. Lamp. Berth. W. J. J. Lamp-holder. O. Lamp, Incandescent electric. A. L. Lamps, Heater attachment for gas. H. F. L. Lard-extractor. C. H. Lasts, Latch for hinged. F. W. Kitt Lathe. G. O. G. Lathes, Relieving attachment for. E. W. Blum Leather-working machinery, Sprayin vice for. J. Elderkin Level, Adjustable. H. A. E. Life-saving apparatus. J. A. Jak Lifting-jack C. E. Loetzer Lifting-jack appliance. A. W. Sall Light-striker. R. von Hc Liquid-concentrating apparatus. P. Ke Liquids in measured quantities. Appa for distributing. S. Ef Lock. F. W. Locomotive exhaust-nozzles, Means for	unlevy utsam Lips other et al aynes eevens bovacic Bohan Krug ederer Bloom Iewitt Ritter linger ridley et al g de- et al obsen et al ander arvath estner fantin falters or au-
Keyhole-guard. G. M. Dr. Keyhoard. F. Cl. Kneading and mixing machine. J. Knife or tool for tapping rubber and gum trees. R. W. Cater Label-applying machine. H. F. M. Lamp. F. M. St. Lamp and lantern extinguisher. B. K. Lamp Berth. W. J. Lampholder. O. Lamp, Incandescent electric. A. Le Lamps, Heater attachment for gas. H. F. Lantern-holder. A. C. E. Lard-extractor. C. H. Lasts, Latch for hinged. F. W. Kitt Lathe. G. O. G Lathes, Relieving attachment for Leather-working machinery, Sprayin vice for. J. Elderkin Level. Adjustable. H. A. E. Life-saving apparatus. J. A. Jak Lifting-jack appliance. A. W. Sall Light-striker. R. von Hc Liquid-concentrating apparatus. P. Ke Liquids in measured quantities. Appa for distributing. S. Ef Locomotive exhaust-nozzles, Means fe tomatically adjusting. W. C. A. Logotype, type-bar and typographic	unlevy utsam Lips other et al faynes eevens ovacie Bohan Krug ederer Bloom linger ridley et al g de- et al ander rovath eat al ander rovath fatter lander
Keyhole-guard. G. M. Dr. Keyhoard. F. Cl. Kneading and mixing machine. J. Knife or tool for tapping rubber and gum trees. R. W. Cater Label-applying machine. H. F. M. Lamp. F. M. St. Lamp and lantern extinguisher. B. K. Lamp. Berth. W. J. J. Lampholder. O. Lamp, Incandescent electric. A. L. Lamps, Heater attachment for gas. H. F. L. Lard-extractor. C. H. Lasts. Latch for hinged. F. W. Kitt Lathe. G. O. G. Lathes, Relieving attachment for. E. W. Blum Leather-working machinery, Sprayin vice for. J. Elderkin Level. Adjustable. H. A. E. Life-saving apparatus. J. A. Jak Lifting-jack C. E. Loetzer Lifting-jack appliance. A. W. Sall Light-striker. R. von Hc Liquid-concentrating apparatus. P. Ke Liquids in measured quantities. Appa for distributing. S. Ef Lock. F. W. Locomotive exhaust-nozzles, Means for tomatically adjusting. W. C. A. Loon for weaving pile fabrics. Need	unlevy utsam Lips other et al laynes evens evens byvacic Bohan lewitt Ritter linger ridley cet al laynes et al laynes evens byvacic Bloom lewitt Ritter linger ridley et al lander oven ander oven fantin fantin fantin fantins orm lilison orm chards le chards
Keyhole-guard. G. M. Dr. Keyhoard. F. Cl. Kneading and mixing machine. J. Knife or tool for tapping rubber and gum trees. R. W. Cater Label-applying machine. H. F. M. Lamp. F. M. St. Lamp and lantern extinguisher. B. K. Lamp Berth. W. J. Lampholder. O. Lamp, Incandescent electric. A. Le Lamps. Heater attachment for gas. H. F. Lantern-holder. A. C. E. Lard-extractor. C. H. Lasts, Latch for hinged. F. W. Kitt Lathe. G. O. G. Lathes, Relieving attachment for Leather-working machinery, Sprayin vice for. J. Elderkin Level, Adjustable. H. A. E. Life-saving apparatus. J. A. Jak Lifting-jack appliance. A. W. Sall Light-striker. R. von Hc Liquid-concentrating apparatus. P. Ke Liquids in measured quantities. Appa for distributing. S. Ef Lock. F. W. Locomotive exhaust-nozzles, Means fe tomatically adjusting. W. C. A. Loom for weaving pile fabrics. Need Loom for weaving pile fabrics. Need Loom for weaving short-weft fabric. H. E. Ra	unlevy utsam Lips other et al faynes evens evens ovacie Bohan Krug ederer linger ridley ct al ct al ct al ct al devens et al devens et al devens et al devens cobsen et al ander ridley chards fantin alters fantin alters fantin sor au llison orm chards be Brooks
Keyhole-guard. G. M. Dr. Keyhoard. F. Cl. Kneading and mixing machine. J. Knife or tool for tapping rubber and gum trees. R. W. Cater Label-applying machine. H. F. M. Lamp. F. M. St. Lamp and lantern extinguisher. B. K. Lamp. Berth. W. J. J. Lamp-holder. O. Lamp, Incandescent electric. A. L. Lamps, Heater attachment for gas. H. F. E. Lantern-holder. A. C. E. Lard-extractor. C. H. Lasts, Latch for hinged. F. W. Kitt Lathe. G. O. G. Lathes, Relieving attachment for E. W. Blum Leather-working machinery, Sprayin vice for. J. Elderkin Level. Adjustable. H. A. E. Life-saving apparatus. J. A. Jak Lifting-jack appliance. A. W. Sall Light-striker. R. von Hc Liquid-concentrating apparatus. P. Ko Liquids in measured quantities. Appa for distributing. S. Eff tomatically adjusting. W. C. A. Locomotive exhaust-nozzles, Means for tomatically adjusting. W. C. A. Loom for weaving pile fabrics. Nced Loom for weaving pile fabrics. Nced Loom for weaving short-weft fabric. Loom. Needle. J. C. E. Lubbricating and disengaging cutting-	unlevy utsam Lips other et al saynes evens evens byvacic Bohan Krug ederer Bloom lewitt Ritter linger ridley et al ander et al ander et al ander et al ander obsen lewitt Ritter linger ridley et al ander orban ander orvath estner aratus fantin alters or au Brooks thbun crooks ttools,
Keyhole-guard. G. M. Dr. Keyhoard. F. Cl. Kneading and mixing machine. J. Knife or tool for tapping rubber and gum trees. R. W. Cater Label-applying machine. H. F. M. Lamp. F. M. St. Lamp and lantern extinguisher. B. K. Lamp Berth. W. J. Lampholder. O. Lamp, Incandescent electric. A. L. Lamps. Heater attachment for gas. H. F. Lantern-holder. A. C. E. Lard-extractor. C. H. Lasts, Latch for hinged. F. W. Kitt Lathe. G. O. G. Lathes, Relieving attachment for. E. W. Blum Leather-working machinery, Sprayin vice for. J. Elderkin Level, Adjustable. H. A. E. Life-saving apparatus. J. A. Jak Lifting-jack appliance. A. W. Sall Light-striker. R. von Hc Liquid-concentrating apparatus. P. Kc Liquids in measured quantities. Appa for distributing. S. Ef Lock. F. W. Locomotive exhaust-nozzles, Means for tomatically adjusting. W. C. A. Loom for weaving pile fabrics. Need Loom for weaving short-weft fabric. H. E. Ra Loom, Needle. J. C. E. Lubricating and disengaging cutting- Means for. C. H. A. F. L. Magnetic separator. B. E.	unlevy utsam Lips other et al faynes eevens eevens bovacie Bohan Krug ederer linger ridley et al cobsen et al ander rovath et al ander rovath fatter linger fantin sor fantin sor cooks thoun Ross Wood
Keyhole-guard. G. M. Dr. Keyboard F. Cl. Kneading and mixing machine. J. Knife or tool for tapping rubber and gum trees. R. W. Cater Label-applying machine. H. F. M. Lamp. F. M. St. Lamp and lantern extinguisher. B. K. Lamp Berth. W. J. J. Lamp-holder. O. Lamp, Incandescent electric. A. L. Lamps, Heater attachment for gas. Lard-extractor. C. H. Lasts, Latch for hinged F. W. Kitt Lathe. G. O. G. Lathes, Relieving attachment for E. W. Blum Leather-working machinery, Sprayin vice for. J. Elderkin Level, Adjustable. H. A. E. Life-saving apparatus. J. A. Jak Lifting-jack appliance. A. W. Sall Light-striker. R. von Hc Liquid-concentrating apparatus. P. Ko Liquids in measured quantities. Appa for distributing. S. Eff tomatically adjusting. W. C. A. Locomotive exhaust-nozzles, Means for tomatically adjusting. W. C. A. Loom for weaving pile fabrics. Need Loom for weaving pile fabrics. Need Loom. Needle. J. C. E. Loom for weaving short-weft fabric. Loom. Needle. J. C. E. Magnetic separator B. E. Magnetic separator B. E. Magnetic separator B. E. Magnetic separator B. E. Magnetic separator R. M. Manicure article, Combination R. M.	unlevy utsam Lips other et al saynes evens evens byacic Bohan Krug ederer Krug ederer Coy obsen ander et al ander et al ander other inger ander other inger ander other inger ander other ander other ander orvath brooks corm chards le brooks thbun trooks thous trooks thous trooks terson Luce
Keyhole-guard. G. M. Dr. Keyhoard. F. Cl. Kneading and mixing machine. J. Knife or tool for tapping rubber and gum trees. R. W. Cater Label-applying machine. H. F. M. Lamp. F. M. St. Lamp and lantern extinguisher. B. K. Lamp and lantern extinguisher. B. K. Lamp. Berth. W. J. Lampholder. O. Lamp, Incandescent electric. A. L. Lamps. Heater attachment for gas. H. F. Lantern-holder. A. C. E. Lard-extractor. C. H. Lasts, Latch for hinged. F. W. Kitt Lathe. G. O. G. Lathes, Relieving attachment for Leather-working machinery. Sprayin vice for. J. Elderkin Level. Adjustable. H. A. E. Life-saving apparatus. J. A. Jak Lifting-jack appliance. A. W. Sall Light-striker. R. von Hc Liquid-concentrating apparatus. P. Kc Liquids in measured quantities. Appa for distributing. S. Ef Lock. F. W. Locomotive exhaust-nozzles, Means for tomatically adjusting. W. C. A. Loom for weaving pile fabrics. Need Loom for weaving pile fabrics. Need Loom for weaving short-weft fabric. H. E. Ra Loom, Needle. J. C. E. Lubricating and disengaging cutting- Means for. C. H. A. F. L. Magnetic separator. B. E. Mail-chute. F. E. And Manicure article, Combination. R. M. Manure-spreader. L. A. Marking and trimmling device.	unlevy utsam Lips other et al faynes eevens ovacie Bohan Krug ederer linger ridley et al cobsen et al ander rivath alters fantin falters or a color co
Keyhole-guard. G. M. Dr. Keyboard F. Cl. Kneading and mixing machine. J. Knife or tool for tapping rubber and gum trees. R. W. Cater Label-applying machine. H. F. M. Lamp. F. M. St. Lamp and lantern extinguisher. B. K. Lamp and lantern extinguisher. B. K. Lamp. Berth. W. J. J. Lamp-holder. O. Lamp, Incandescent electric. A. L. Lamps, Heater attachment for gas. H. F. L. Lantern-holder. A. C. B. Lard-extractor. C. H. Lasts, Latch for hinged. F. W. Kitt Lathe. G. O. G. Lathes, Relieving attachment for E. W. Blum Leather-working machinery, Sprayin vice for. J. Elderkin Level. Adjustable. H. A. E. Life-saving apparatus. J. A. Jak Lifting-jack appliance. A. W. Sall Light-striker. R. von Ho Liquid-concentrating apparatus. P. K. Liquids in measured quantities. Appa for distributing. S. Eff tomatically adjusting. W. C. A. Locomotive exhaust-nozzles, Means for tomatically adjusting. W. C. A. Logotype, type-bar and typographic f Loom. Needle. J. C. B. Loom. Needle. J. C. B. Ludarnetic separator. B. E. Magnetic separator. B. E. Magnetic separator. C. H. A. F. L. Magnetic separator. B. E. Manil-chute. F. E. And Manicure article, Combination R. M. Manure-spreader. L. A. Marking and trimmling device. R. J. Meland Meat-block, Revolving. J. F. M. Mankes block, Revolving. J. F. M. Mankes block, Revolving. J. F. M. Mankes block, Revolving. J. F. M. Mass block. Revolving. J. F. M. Mass block. Revolving. J. F. M. Mass block. Revolving. J. F. M. Mankes block. Revolving. J. F. M.	unlevy utsam Lips other et al aynes evens evens bovacic Bohan Krug ederer Krug ederer Coy obsen ander et al ander ervatio ander ervath in cons antin alters aratus fantin alters aratus fantin cons chards aratus fantin cons chards frooks thbun trooks ttools, Ross Wood lerson Luce Funk et al alone
Keyhole-guard. G. M. Dr. Keyboard F. Cl. Kneading and mixing machine. J. Knife or tool for tapping rubber and gum trees. R. W. Cater Label-applying machine. H. F. M. Lamp. F. M. St. Lamp and lantern extinguisher. B. K. Lamp Berth. W. J. Lamp. Berth. W. J. Lamp. Incandescent electric. A. Le Launps, Heater attachment for gas. H. F. Lantern-holder. A. C. E. Lard-extractor. C. H. Lard-extractor. C. H. Lasts, Latch for hinged. F. W. Kitt Lathe. G. O. G. Lathes, Relieving attachment for. E. W. Blum Leather-working machinery, Sprayin vice for. J. Elderkin vice for J. Elderkin Level. Adjustable. H. A. E. Lifte-saving apparatus. J. A. Jak Lifting-jack. C. E. Loetzer Lifting-jack appliance. A. W. Sall Light-striker. R. von Hc Liquid-concentrating apparatus. P. K. Liquids in measured quantities. Appa for distributing. S. Eff Lock. F. W. Locomotive exhaust-nozzles, Means for tomatically adjusting. W. C. A. Logotype, type-bar and typographic f. E. Com. Needle. J. C. E. Loom for weaving pile fabrics. Need Loom for weaving short-weft fabric Means for. C. H. A. F. L. Mannetic separator. B. E. Mail-chute. F. E. And Manure article, Combination R. M. Manure-spreader. L. A. Marking and trimmling device. R. J. Meland Meas-kit. C. A. 1 Mess-kit. C. A. 1 Metal bodies, Producing compound. 2	inlevy utsam Lips other et al saynes eevens eevens bovacie Bohan Krug ederer linger linger ridley et al ander rovath et al ander rovath sartiner sartiner sartiner sartines sartiner sartines sa
Keyhole-guard. G. M. Dr. Keyboard F. Cl. Kneading and mixing machine. J. Knife or tool for tapping rubber and gum trees. R. W. Cater Label-applying machine. H. F. M. Lamp. F. M. St. Lamp and lantern extinguisher. B. K. Lamp and lantern extinguisher. B. K. Lamp. Berth. W. J. Lampholder. O. Lamp. Incandescent electric. A. L. Lamps. Heater attachment for gas. H. F. L. Lard-extractor. C. H. Lasts, Latch for hinged. F. W. Kitt Lathe. G. O. G. Lathes, Relieving attachment for E. W. Blum Leather-working machinery, Sprayin vice for. J. Elderkin Level. Adjustable. H. A. E. Liffe-saving apparatus. J. A. Jak Lifting-jack appliance. A. W. Sall Light-striker. R. von Ho Liquid-concentrating apparatus. P. K. Liquids in measured quantities, Appa for distributing. S. Ef. Lock. F. W. Locomotive exhaust-nozzles, Means for tomatically adjusting. W. C. A. Logotype, type-bar and typographic for Loom for weaving pile fabrics. Need Loom for weaving pile fabrics. Need Loom. Needle. J. C. B. Marnetic separator. B. E. Mail-chute. F. E. And Manure-spreader. L. A. Manure-spreader. L. A. Manure-spreader. R. J. Meland Meat-block. Revolving. J. F. M. Metal sheets, Apparatus for producing	unlevy utsam Lips other et al saynes eevens eevens Bohan Krug ederer Krug ederer linger ridley obsenl ander aratus fantin salters saratus fantin salters saratus fantin Luce Funk et al salone pats oonnot g cor-
Keyhole-guard. G. M. Dr. Keyboard F. Cl. Kneading and mixing machine. J. Knife or tool for tapping rubber and gum trees. R. W. Cater Label-applying machine. H. F. M. Lamp. F. M. St. Lamp and lantern extinguisher. B. K. Lamp. Berth. W. J. J. Lamp. Heater extractor. A. L. Lanps. Heater attachment for gas. H. F. Lantern-holder. A. C. E. Lard-extractor. C. H. Lasts, Latch for hinged. F. W. Kitt Lathe. G. O. G. Lathes, Relieving attachment for. E. W. Blum Leather-working machinery, Sprayin vice for. J. Elderkin Level. Adjustable. H. A. E. Life-saving apparatus. J. A. Jak Lifting-jack. C. E. Loetzer Lifting-jack appliance. A. W. Sall Light-striker. R. von Hc Liquid-concentrating apparatus. P. Ko Liquids in measured quantities, Appa for distributing. S. Ef Lock. F. W. Locomotive exhaust-nozzles, Means for tomatically adjusting. W. C. A. Logotype, type-bar and typographic f Loom for weaving pile fabrics. Need Monitory and disengaging cutting- Means for. C. H. A. F. L. Magnetic separator. B. E. Loom. Needle. J. C. E. Lubricating and disengaging cutting- Means for. C. H. A. F. L. Magnetic separator. B. E. Mail-chute. F. E. And Manure-spreader. L. A. Manure-spreader. L. A. Manure-spreader. L. A. Marking and trimming device. Meat-block, Revolving. J. F. M. Mess-kit. C. A. J. Metal bodies, Producing compound. 2 Metal sheets, Apparatus for producing rugated. G. B. Jo Meter system. J. A. J. Mining-drill thread her and	unlevy utsam Lips other et al saynes evens ovacie Bohan Krug Boom Ilewitter linger ridley et al schert cet al schert sche
Lantern-holder. A. C. E. Lard-extractor. C. H. Lasts, Latch for hinged. F. W. Kitt Lathe. G. O. G. G. Lathes, Relieving attachment for E. W. Blum Leather-working machinery, Sprayin vice for J. Elderkin Level. Adjustable. H. A. E. Life-saving apparatus. J. A. Jak Lifting-jack. C. E. Loetzer Lifting-jack appliance. A. W. Sall Light-striker. R. von Holiquid-concentrating apparatus. P. Ko Liquid-concentrating apparatus. P. Ko Liquid-concentrating apparatus. P. Ko Locomotive exhaust-nozzles, Means for distributing. S. Eff Lock. F. W. C. A. Logotype, type-bar and typographic for distributing and typographic fabrics. Need. J. C. E. Loom for weaving pile fabrics. Need. J. C. E. Loom for weaving short-weft fabric. H. E. Ra Loom. Needle. J. C. E. Lubricating and disengaging cutting-Means for. C. H. A. F. L. Magnetic separator. B. E. Mail-chute. F. E. And Manicure article, Combination. R. M. Manure-spreader. L. A. Marking and trimmling device. R. J. Meland Meast-block, Revolving. J. F. M. Mess-kit. C. A. 1 Metal bodies, Producing compound. 2 Metal sheets, Apparatus for producing rugated. G. B. Jo Metal sheets, Apparatus for producing rugated. G. B. Jo Metal sheets, Apparatus for producing rugated. G. B. Jo Mining-drill thread-box and support.	lewith Ritter linger rilinger
Lantern-holder. A. C. E. Lard-extractor. C. H. Lasts, Latch for hinged. F. W. Kitt Lathe. G. O. G. G. Lathes, Relieving attachment for E. W. Blum Leather-working machinery, Sprayin vice for J. Elderkin Level. Adjustable. H. A. E. Life-saving apparatus. J. A. Jak Lifting-jack. C. E. Loetzer Lifting-jack appliance. A. W. Sall Light-striker. R. von Holiquid-concentrating apparatus. P. Ko Liquid-concentrating apparatus. P. Ko Liquid-concentrating apparatus. P. Ko Locomotive exhaust-nozzles, Means for distributing. S. Eff Lock. F. W. C. A. Logotype, type-bar and typographic for distributing and typographic fabrics. Need. J. C. E. Loom for weaving pile fabrics. Need. J. C. E. Loom for weaving short-weft fabric. H. E. Ra Loom. Needle. J. C. E. Lubricating and disengaging cutting-Means for. C. H. A. F. L. Magnetic separator. B. E. Mail-chute. F. E. And Manicure article, Combination. R. M. Manure-spreader. L. A. Marking and trimmling device. R. J. Meland Meast-block, Revolving. J. F. M. Mess-kit. C. A. 1 Metal bodies, Producing compound. 2 Metal sheets, Apparatus for producing rugated. G. B. Jo Metal sheets, Apparatus for producing rugated. G. B. Jo Metal sheets, Apparatus for producing rugated. G. B. Jo Mining-drill thread-box and support.	lewith Ritter linger rilinger
Lantern-holder. A. C. E. Lard-extractor. C. H. Lasts, Latch for hinged. F. W. Kitt Lathe. G. O. G. G. Lathes, Relieving attachment for E. W. Blum Leather-working machinery, Sprayin vice for J. Elderkin Level. Adjustable. H. A. E. Life-saving apparatus. J. A. Jak Lifting-jack. C. E. Loetzer Lifting-jack appliance. A. W. Sall Light-striker. R. von Holiquid-concentrating apparatus. P. Ko Liquid-concentrating apparatus. P. Ko Liquid-concentrating apparatus. P. Ko Locomotive exhaust-nozzles, Means for distributing. S. Eff Lock. F. W. C. A. Logotype, type-bar and typographic for distributing and typographic fabrics. Need. J. C. E. Loom for weaving pile fabrics. Need. J. C. E. Loom for weaving short-weft fabric. H. E. Ra Loom. Needle. J. C. E. Lubricating and disengaging cutting-Means for. C. H. A. F. L. Magnetic separator. B. E. Mail-chute. F. E. And Manicure article, Combination. R. M. Manure-spreader. L. A. Marking and trimmling device. R. J. Meland Meast-block, Revolving. J. F. M. Mess-kit. C. A. 1 Metal bodies, Producing compound. 2 Metal sheets, Apparatus for producing rugated. G. B. Jo Metal sheets, Apparatus for producing rugated. G. B. Jo Metal sheets, Apparatus for producing rugated. G. B. Jo Mining-drill thread-box and support.	lewith Ritter linger rilinger
Lantern-holder. A. C. E. Lard-extractor. C. H. Lasts, Latch for hinged. F. W. Kitt Lathe. G. O. G. G. Lathes, Relieving attachment for E. W. Blum Leather-working machinery, Sprayin vice for J. Elderkin Level. Adjustable. H. A. E. Life-saving apparatus. J. A. Jak Lifting-jack. C. E. Loetzer Lifting-jack appliance. A. W. Sall Light-striker. R. von Holiquid-concentrating apparatus. P. Ko Liquid-concentrating apparatus. P. Ko Liquid-concentrating apparatus. P. Ko Locomotive exhaust-nozzles, Means for distributing. S. Eff Lock. F. W. C. A. Logotype, type-bar and typographic for distributing and typographic fabrics. Need. J. C. E. Loom for weaving pile fabrics. Need. J. C. E. Loom for weaving short-weft fabric. H. E. Ra Loom. Needle. J. C. E. Lubricating and disengaging cutting-Means for. C. H. A. F. L. Magnetic separator. B. E. Mail-chute. F. E. And Manicure article, Combination. R. M. Manure-spreader. L. A. Marking and trimmling device. R. J. Meland Meast-block, Revolving. J. F. M. Mess-kit. C. A. 1 Metal bodies, Producing compound. 2 Metal sheets, Apparatus for producing rugated. G. B. Jo Metal sheets, Apparatus for producing rugated. G. B. Jo Metal sheets, Apparatus for producing rugated. G. B. Jo Mining-drill thread-box and support.	lewith Ritter linger rilinger
Keyhole-guard. G. M. Dr Keyboard. F. Cl Kneading and mixing machine. J. Knife or tool for tapping rubber and gum trees. R. W. Cater Label-applying machine H. F. M. St Lamp and lantern extinguisher. B. K. Lamp and lantern extinguisher. B. K. Lamp Berth. W. J. Lamp-holder. O. Lamp, Incandescent electric. A. L. Landen-holder. A. C. E. Lard-extractor. C. H. Lasts, Latch for hinged. F. W. Kitt Lathe. G. O. G. Lathes, Relieving attachment for E. W. Blum Leather-working machinery. Sprayin vice for J. Elderkin Level. Adjustable. H. A. E. Life-saving apparatus. J. A. Jak Lifting-jack appliance. A. W. Sall Light-striker. R. von Ho Liquids in measured quantities. Appa for distributing. S. Eft Lock F. W. Locomotive exhaust-nozzles, Means f tomatically adjusting. W. C. A. Loom for weaving pile fabrics. Need Loom for weaving short-weft fabric. Means for. C. H. A. F. L. Magnetic separator. B. E. Loom, Needle. J. C. E. Loetzer Ludid-chute. F. E. And Manure-spreader. L. A. Marking and trimming device. Meats-block. Revolving. J. F. M Metal bodies, Producing compound. 2 Mess-kit. C. A. J. Metal sheets, Apparatus for producing rugated. G. B. Jo Metsal sheets, Apparatus for producing rugated. G. B. Jo Metal sheets, Apparatus for producing rugated. G. B. Jo Metal sheets, Apparatus for producing Rif for C. N. B. Mining-machines of the cutting-chain Bit for C. N. B. Miscr. W. H. Larking Molding device. J. A. T. Mining-machines of the cutting-chain Bit for C. N. B. Miscr. W. H. Larking Molding device. J. A. Molding device. J. J. Musical instruments or orchestrions. T. Musical instruments or orchestrions.	lewith Ritter linger rilinger

Musical instruments, Tracker-board for mechanicalJ. O'Connor Nest, TrapH. E. Pennington et al Nut-lockA. B. Cornelius et al Nut-lockE. Schnelle Nut-lockA. Le Blanc Oil our Thormostotie
Nut-lock
Optometer. I. Fox Ore-dressing machine
Ore-dressing machine
Peneil-elip. C. C. Bradbury Peneil-elip. W. B. Goode Photographic apparatus
Picture machine, MovingA. F. Smith Picture machines, Film-reel for moving T. Sharlow Pipe-cleauing apparatus, Water
Picture machines, Film-reel for moving T. Sharlow Pipe-cleauing apparatus, Water N. S. Hill, Jr., et al Pipe coupling, TrainT. Reynolds Pipe-hangerE. H. Roberts Planter attachment, CornJ. S. Smith Planter, CornH. F. Carter Planter, CornM. Mauger et al PlowR. M. Kemp Plow. R. M. Kemp Plow, Reversible multifurrow disk D. H. Smith
Plow, Reversible multifurrow disk
Plow, Reversible multifurrow disk
Radiator or other heating-stove heated by gaseous fuel
fastening, Metallic. J. W. Clubb Railway-frog. A. Hollinger Railway joint-chair. P. Radoman Railway safety system, Electric. A. Casale Rallway-switch. F. P. Abman Railway-tle. C. Livingood Railway-tle. J. Dematteis Razor-blade holder. J. E. Dube Razor-strop clamp. A. Elsner Receptacle-cover. B. F. Kramer Reclining-chair, Adjustable. A. D. Luedders Recoil-loader with fixed barrel. P. Mauser Refrigerating system. E. T. Winkler Refrigerating system. A. Faget
Receptacle-cover. B. F. Kramer Reclining-chair, Adjustable A. D. Luedders Recoil-loader with fixed barrel. P. Mauser Refrigerating system. E. T. Winkler Refrigerating system. A. Faget Refrigerator-car. A. W. Watson Refrigerator-mounting.
Recoil-loader with fixed barrel. P. Mauser Refrigerating system. E. T. Winkler Refrigerating system. A. Faget Refrigerator-car. A. W. Watson Refrigerator-mounting. F. Lutz Riveting-machine. W. Baker Rock-pulverizing machine. J. B. Rossman Root-puller. G. T. McGehee Rotary engine. W. M. Hoffman Rudder. W. R. Bennett Sad-iron J. L. Ennis Safe having coin-operated lock. M. Emer Safe or vault. C. Bartels Safety-limit-switch. W. W. and G. A. Pierce Sandpapering-machine. L. H. Breckenkamp Sash-hanger. H. P. Sarchett Sash-hock. E. Blossfeld Saw-set. J. Rogers Saw-set. L. W. Parkhurst Screw-cutting-die head. W. Neumann Seal, Envelop. F. Shannon Seat-framc. H. S. Halc Seeder. C. J. Stein Separating heterogeneous substances and detinning scrap. C. J. Reed Settee. S. F. Balentine Sewing-machine stitch-forming mechanism J. P. Weis Sewing-machines, Differential attachment
Safe or vault
Sash-hanger H. P. Sarchett Sash-lock E. Blossfeld Saw-set J. Rogers Saw-set L. W. Parkhurst
Screw-cutting-die head. W. Neumann Seal, Envelop. F. Shannon Seat-framc. H. S. Halc Seeder. C. J. Stein Separating heterogeneous substances and detinning scrap. C. J. Reed Settae
Sewing-machine stitch-forming mechanism J. P. Weis Sewing-machines, Differential attachment for. J. P. Weis
Shade-bracket
Sewing-machine stitch-forming mechanism J. P. Weis Sewing-machines. Differential attachment forJ. P. Weis Shade-bracket. P. Rabideau Shades, Swinging support for window M. J. Smith Shipping aud display box for food products J. J. Lynch Shoe-trec. J. G. McNair Shoveling-machine. C. L. Glass Shuttle J. Gagnon Sifter, Ash T. P. Bolger Sifteing-shovel. J. Moller Singeing machine. T. Allsop et al Skates and the like Wheel for roller
Sifting-shovel. J. Moller Singeing machine. T. Allsop et al Skates and the like, Wheel for roller H. S. Yoxall et al Sled-propeller. W. R. Murphy Snow-plow, Rotary. C. B. Mann Soda, Preparing caustic. H. Reitz Sodium, Manufacture of metallic.
Sodium, Manufacture of metallic
Speed mechanism, VariableH. W. Schatz Speel-holderA. Musk Spring constructed with india-rubber Buf-
fer and other
Stage effectF. D. Thomas

Steam-engine
Tank-closure. B. A. Luke Telegraphy C. G. Burke Telephone. J. W. Atlee Testing-clamp M. J. Gray Thawing-furnace, Portable. T. D. Bausher Threshing-machine. C. L. Beau Tide-motor. D. M. Barr
Tie-tamping machineJ. Linf Tile and saggar, Combined. 2 patsG. E. Vance Tire-bolt cutter and nut turner and splitter
Tire-casing G. Helier Tire-protector, Pneumatic O. A. Brietson Tire, Wheel S. Grunewald Tool holder, Boring C. E. Day Tool-shank G. E. Hackett Tools, Machine for shaping heavy. E. N. Mills Tooth-crowns, Means for forming
Tooth-crowns, Means for forming
Top-spinuiug deviceC. C. Tannert
Trolley-car-pole attachmentG. R. Dunn
Turbie, Elastic-fluid. C. R. Waller Turn-table. G. A. Bronder Type-casting-machine attachmeut. Type-writer. J. W. Paul Type-writing machine. W. Y. Forbes et al Type-writing machine. C. B. Yaw Type-writing machine. O. Woodward Umbrella attachment. G. D. Cory Vacuum-cleaner. W. H. Rakestraw Vacuum-cleaner, Hand. C. G. Hutchinson Valve, Air-brake protection. Valve, Cut-off. M. D. Menear et al Valve device, Triple. M. V. Turner Valve for fluid-operated motors, Control- ling. C. A. Parsons et al Valve, Graduated-release triple. M. V. Turner Valve mechanism for compound engines.
Valve, Air-brake protection
Valve, Cut-off
Valve, Graduated-release triple
Valve mechanism for compound engines
Valve mechanism for compound engines P. O. Poulson Valve, Steam-pressure reducing and control- ling
Valve, Stop C. O. Hawkins
Valves, Device for facilitating the removal
Varnish for coating leather, Apparatus for manufacturingG. W. Priest
Vehicle controlling mechanism
Vehicle draft attachment, MotorO. E. Ritzmann Vehicle spring-suspension arrangement
C. E. Rennen et al Vehicle-wheel. C. Kindscherf Vchiclc-wheel. J. H. Esders
Vehicle-wheel, Cushioned
Vehicle draft attachment. Motor. J. T. Whalen Vehicle draft attachment. Motor. C. E. Rennen et al Vehicle-wheel. C. Kindscherf Vchiclc-wheel. J. H. Esders Vehicle-wheel, Cushioned. M. H. Aldridge J. Rostenberg Veil holder or retainer for bonnets. Ventilating system A. L. Werner Vibration and sound, Plate for deadening. W. Genest et al Voltage-regulator. R. Fleming Wagon-box protector. N. P. B. Eskildsen Wagon front gear. G. Kautz. Sr. Wall and the like, Brick. W. Stanway Washing-machine. J. P. Dorau Watch-movement ratchet mechanism. W. H. Ebelhare Water-wheel stop. W. D. White Water-wheel stop. W. D. White Water-wheel stop. W. D. White Weather-strip. S. F. Haskell Wcb-roll-tension device. G. F. Read Welding-burner. A. B. Drager Wells, Tile setter for. A. H. Klucking Wheel. R. D. Moon Wheel rim, Vehicle. E. C. Shaw Window-screen. E. Walrath et al Window-screen. E. H. Talbert Window-ventilator. J. B. Scureman Wire-cutter. T. A. Briggs Wire-stretching clamp. O. J. Nederloe Wood-preserving solution. F. Hasselmann Wrench. P. Bajusz et al Wrench. P. Bajusz et al
Voltage-regulator. R. Fleming Wagon-box protector. N. P. B. Eskildsen
Wall and the like, Brick
Watch-movement mechanism. H. M. Groff Watchease-bow
Water-heater
Weather-stripS. F. Haskell Web-roll-tension deviceG. F. Read
Welding-burnerA. B. Drager Well strainer, DrivenC. G. Smith
Wells, Tile setter forA. H. Klucking WheelR. D. Moon
Wheel rim, VehicleE. C. Shaw Window-frameF. E. Frishee
Window-screenA. H. Newpher Window-screenE. Walrath et al
Window-screenE. H. Talbert Window-ventilatorJ. B. Scureman
Wire-cutterT. A. Briggs Wire-stretching clampO. J. Nederloe
Wood-preserving solutionF. Hasselmann WrenchF. A. Trahin
Wrench
DESTONS
Automobile-bodyE. Heyl Badge, PuzzleW. B. Bliss
Box-mat
Lamp shade or reflectorJ. Kappler
Rug J. Karpeles E. G. Sauer Rug J. Spring
Automobile-body. E. Heyl Badge, Puzzle W. B. Bliss Box-mat R. Gair Clock and hall stand L. A. Greitinger Game-board or similar article G. N. Rock Lamp shade or reflector J. Kappler Muff J. Karpeles Rug E. G. Sauer Rug J. Spring Stove S. P. Landcraft Stove M. R. Lehman

Issued October 4, 1910.

MECHANICAL PATENTS.

	Bit for	Speed mechanism, Variable, H. W. Schatz Spool-holder, A. Musk Spring constructed with india-rubber, Buf- fer and other. A. G. Spencer Spring-wheel F. C. Oldham Springs, Machine for forming loops on coil	Aeroplane
--	---------	--	-----------

Alloy and making sameL. C. Dodd	l Cot
Auimal-shearsJ. D. Scovel	I . : Co
Auimal-shears. J. D. Scovel Animal-trap J. F. Draper Antenna R. H. Marriott	t Cra
Arches, Skewback for hollow-the	U. 17
Ash-box. E. F. Jones et a. Anger, Post-hole. G. M. Fenr	l Cn
Anger, Post-holeG. M. Fenr Automatic brakeC. L. Taylor	ı Cu: r Cu:
Anger, Post-hole	ı Cu
Antomobile attachment	i Cn S Cy
Automobile-hornA. V. Piskorsk	i Cy
Antomobile, SteamR. II. White	e S l Da
knockdown folding seat for	Da
Awl Needle C A Carlson	l Da 1 €
Axle-InbricatorJ. L. Masters	s Da
Bail car, Pail and bucketT. Jerolaman	1 De
Bailing apparatus J. N. Wood Baling device. J. N. Wood Bailing-press H. J. Hanson Baling-press G. E. Jackson Baling-press 2 pats J. N. Wood Ballast-unloader W. Ferris	i De
Baling deviceJ. N. Wood	l Di:
Baling-press	ı Di: ı Di:
Baling-press. 2 pats J. N. Wood	l Dis
Dateeries. Vehi-tilde 101 Stolage	
Battery-carrier. V. G. Apple Battery-tank system. F. A. Decke	t Dis
Battery-tank systemF. A. Decker	e Di: r Do
Bed. A. F. Crandal Bed-bottom, Spring. J. Toth et a	1 100
Dad for involide A E Crandal	T)
Bed-spring-supporting frame	120
Bed-spring-supporting frame. W. F. Weppne. Belt, Supporting. M. E. William: Belt, Waist. D. Marinsky. Bicycle-shade. L. and J. Coope.	r Do s
Belt, WaistD. Marinsky	y Dr
Billet-piercing machineJ. D. Adams	r Dr s Dr
Billet-piercing machine. J. D. Adam Binder, Temporary. A. D. Ray	y Dr
Blind-fastenerE. L. Prat Blower, Rotary pressureP. D. Brewste	t Dr r (
Botler C. Kne:	1 1 1 1 1 2
Boiler furnace, SteamA. II. Hansle Bolts, nnts, &c., Means for protecting	r Du
A. Adan	. Dy
Bookkeeper's loose-sheet holder	1 D ₂
Bottle-filling machine C. L. Bastian	r Ea
Bottle-filling machineC. L. Bastian Bottle, Non-refillableJ. Missall et a	a t l Ec
Pottle You-refillable I T Rinf	F 12.7
Bouquet-holder	r Eg
Bouquet-holder C. Mui Box-fastener F. R. Proscot Brace-waist, Combination E. M. Clewel Breeching A. Shor Bricks, Molding H. Schulte-Steinbers	t Ele
Breeching	t El
Brnsh-cleaner for sieves and bolters	
Buckle, Cross-line F. Knobe Buffer J. W. Campbel Building material W. E. Brocl Bunk-dog Burglar-alarm G. H. Chappel Burglar-alarm L. Myer	1 E1
Building materialW. E. Broch	1 Ele k Ele
Bunk-dogB. Tucke	r Ele
Burglar-alarınL. Myer	l Ele s g
Bnrglar-alarm, Repeating. E. Aller Cable-traction system for shiftable endless	a Ele
tracksA. Anrei	р - ЕЪ
Calculating-machine	70 TT
Can receptacle, Sanitary garbage	• En
Can receptacle, Sanitary garbage	g (I En
Car automatic danger-signal and intermit	- 1511
tently infullinating-advertiser, Electric.	 EII
Car buffing mechanism, RailwayR. D. Gallagber, Jr.	у 1 • Еп
	e En
Car closure, DumpJ. W. Moor Car-coupling F. C. Reynold	S 1
Car-coupling. F. C. Reynold Car coupling, Railway. R. D. Gallagher, Jr Car, Dumping. J. M. Goodwir Car grain-door, Freight. W. K. Lavi Car-hanl. P. W. Holstein et a Car-seat. F. M. Billhim Car-seat. C. W. H. Fredericl Car-wheel-easting mold. 2 pats. J. K. Griffitt Cars and the like, Spare wheel for motor. G. Huysman	· Ex
Car, DumpingJ. M. Goodwin	n Ex
Car grain-door, FreightW. K. Lavi	s Ey
Car-seatF. W. Holstein et a	e Fa
Car-scat	k Fa
Car-wheer-easting mold. 2 pars	h Fa
Cars and the like, Spare wheel for motor.	. Elo
Care Compressed-nir exetem for railway	
O. Johnson	n Fa
Carbonized fabric. F. L. Horton Carbureter. 2 pats. G. M. Scheble Carpet lining and pad, Stair. J. H. Beal Cartridge-shell-feeding machine.	r Fa
Carpet lining and pad, StairJ. H. Beal	e Fa
Cartridge-shell-feeding machine	. Fa
Casting apparatus, PipeF. Herber	t Fo
Casting ingots	ll F∈ n F€
Casting apparatus, Pipe. F. Herber Casting ingots. W. H. Connel Casting-machine, Centrifugal. J. M. Alle Cement-mold, Adjustable. W. H. Mille Chandeliar, Extensible electric-light.	r
Chandelier, Extensible electric-light	· Fe
Char-revivifying kilnR. S. Ken	it Fi
Check-protector, PocketF. S. Georg	e Fi d Fi
Chuck, DrillA. Knap	p Fi
Chandelier, Extensible electric-light. C. C. Kenned Char-revivifying kiln. R. S. Ken Check-protector, Pocket. F. S. Georg Chisel-bar. R. P. Penro Chuck, Drill. A. Knap Chnck for machine-work. H. O. Evan Clamping meehanism. J. C. Meloo Cleaning and separating machine. A. T. Hedfeld	ıs Fi m
Cleaning and separating machine	F
Cleaning device	it is Fl
Cloth-finishing machineR. T. Todd et	il Fi
Coller F. H. Stace Commutator-truing machine C. E. Hurn	it
Compass, Beam	in F :h F
Concrete constructionJ. E. Conzelma	in F
Concrete bit for wagon-scales, Kellingiveu.	
Concrete post for clothes-lines.	. F
Condenser Electrical W W Dea	nt F
Condenser, Electrical W. W. Des Cooking utensil J. Brye.	rs F
Goler and soda rodnerin construction of W. and H. A. Wis	se
Cotton-chopper	un r
Cotton-gatherer	rs F on F
Counterbalancing deviceO. S. Bey	er F

	1	1	1	11/ 			· ¥		\ .	
Counterpane or	bе	dsj	ore	ad.					F	
Counterpane or Cow-tail holder. Crank attachmer Cranking device Cross-head Cnilnary article. Culvert, Metal.	• • •			II		an . H	De De	venter erkett	F	
Crank aftachmei Cranking device	ıt,	. A	dji 	usta	ые R	. Т. Е	Е. [. (Lutz	I.	
Cross-nead Chlinary article. Culvert Motel				· · · ·	.s.	в.,	Ha Ha	rrison Portor	· H	
Cuspidor Cuspidor Cut-ont Antoma	tic		• •	• • • •	N		L.	Jakab Vright	ŀ	
Culvert, Metal Cuspidor Cut-out, Antoma Cutter-head, Roi Cycle gearing, N	tar	y. tor		J. ,	J. V	Ϋ́. [] . F.	Alex S.	ander Jones	Ò	3
Seaf for moto	1°		en	-Įn o	tier	G.	R.	Kittle	\sim	11/11
Dampening-mach Dampening mac	iin hin	e.,	Ċ	 ດໄໄລ:	, , ,	Н. Н.	C.	Miller	(
Dampening the eollars, Machi Dandy-roll	ne ex	fo	a-t		· · · ·	na H.	Sea C.	ms or Miller Plank		
Dental air-pump Dental casting-n) ດຄ6	hi:	i. ne	 	. iv	. Е. F.	Me La	essmer		
Detinning Dish-washer			F.	von C.	J. (ngel O. I	ger 3ers	et al estrom	(
Dandy-roll. Dental air-pump Dental casting-n Detinning. Dish-washer. Display-casc. Display device. Display mechan Display-rack. Distilling system Docks, Building Door-check. Door, Grain. Door-hanger.			• •	• • • •	F	. C.	. _C .	orman Hoyt	: (
Display device,	l' ian	osi	al	-car	d	V.	J. (Cooper	(
Display-rack Distilling system	1811				.j.	M If	eLa Di	ughlin Lanv	. (
Docks, Building Door-check						Т. J.	N. F. I	Berge Naugle	. (
Door, Grain Door-hanger					1	W. H.	H. L.	Jump Biddle)	
Door banger tru	ol:	0.1	1 A	CHIL	TOOP	+				
Draft appliance. Draft-equalizer. Draft gear, Rad		• •			\vec{W}		1	Nourse Vinger LeXatt	: · (
Draft gear, Rad Drill dust-catche	ial er.			• • • •	ΞÉ	. 11		ehmidt Stuckel	(
Drilling, boring tachment for.	ar	id	si	mila	r n	aael . F.	ine A.	s. At- Kirby	.]	
Drilling device, Dust-collector	Ra 	ite :	he :-	t	A	. P . U.	. Je	olinsen edicko	.]	Ī
Drill dust-catche Drilling, boring fachment for. Drilling device, Dust-collector Dyeing and prod Dyestuff for wor Earth-hole-form terminating p	iue	t t ∵	he	reo	2	pa 	ts J.	Deinet	;] ;]	ľ
Earth-hole-form	ine		na	ow (chir	 1198	A_{r}	L.	Laska ed-ex-		l
terminating p Economizer	urj	os	es		• • • •	A	. J . A	Prisk Low	. 1	
Economizer Educational nov Egg-cup Electric-cable r	elt • : •	у. . Е		E	N A .	I. S Mac	Stoc Na	klmier ughton	,]	l
Electric-cable r	etr I	iev I.	R	 . ar	id :	Ė. į	 В (Graves] :]	
Electric-current Electric ignition Electric machine Electric switch. Electric switch. Electric switch. Electric switch. Electrical heater Electricity, Met generating. Elevating, tran material, Appe Elevator door, S Embalming-coue	ge Lai	pp pp	ra lia na	nce	.н.	A. A .	M	. Low	Į	I
Electric machine	ns.	Ce	oil-	sup	R	t fo	villi r d	amson yname		
Electric switch.					.в.	$\mathbf{W}_{*}^{\mathbf{A}}$	$_{\mathrm{S.}}^{\mathrm{B}}$	ehrend Maycı	.]	Į
Electric switch. Electric switch.					. L.	W. I	. V	Vatson lorting		Į
Electricity, Met	ho	d	of	an	d a	nen .ppa .r	rat Sel	g et al US foi hwerin	.]	Ī
Elevating, tran	sp	ort tu	in:	g e for.	ind	. d. Г. 8	isch	arging Vatson		[
Elevator door, S Embalming-couc	Sid h,	ew E:	all ste	k nsi	on.	C. (G. :	Jansor Vugent]	
Engine Engine-exhaust-	val	7.e		wa	ter) 9	i. J onn	. Lake ection.		
Engine ignition	tiı	ne	r,	Int	ern	. W ป-6 ฮ	. r oml C	nstion Masor	. '	I
Elevator door, S Embalming-couc Engine. Engine. Engine ignition Engine ignition Engines, Charge nal-combustior Engraving-mach Envelop. Envelop-loading mechanism fo Excavating and	e-f	ori	nir	ng (levi U.	ce Cas	for sed	inter v. Sr		Į
Engraving-mach Envelop	ine	٠			.s.	 Т.	v. W	Steers ingelei	3	
Envelop-loading mechanism fo	۱ ۱	na ::	ch :	ines J. R	. 7	&c., Filli	am:	intting s et a		1
Explosive engine	 TO		m;	g m		ine L.	K	erchei	r :	Į
Explosive-engine Eyeglasses and	sp	ect	ta e	les,	Ri	mle . R.	ss. E.	Boyo	1)
Fan. Fare-register-op Fare-register-op Fastening for ga Fat and other s ting.	 era	ii.	ıg	dev	ice.	. C.	Sv a <u>r</u> .	veetse	r]
Farc-register-op	era	itii	ng	me	.E. cha	S. nisi	Bu n	oknan Ohmo	1]
Fastening for ga	ırn	iei	it-	supp	ort A	s, I	r. Deta Jane	chable lervele	1]
Fat and other s	ub:	sta	ne	es,	Ma	hin E.	e f E.	or cut Motte	r]
fat and other sting. Faucet. Faucet attachm Faucet, Self-clo Feed-water heat Fence, Wire Ferrule-making Fertilizer-distril	en	t		E.	. S.	· E.	uerl _Gl	k et a ladding	1	
Feed-water heat	ter		• •		. W	. S.	Fe	rarie; ergiisoi lawsoi	y l l	
Ferrule-making Fertilizer-distrib	too but	oI. er:	 S,	Con	rey	.R. er-a	A. pro	Merril n for.	i •	
Fertilizer, Man Filling-machine Fire-alarm Fire-extinguishe	ifa	eti	ıre	1 e of	E. 1	Bus L.	$_{ m R.}^{ m wel}$	Let a Coate	l s	
Filling-machine. Fire-alarm		 A i			w	C.	M	Jaege atthia ndrow	r s	
Firearm, Autom Firearms, Actic Fireproof build:	nat nat	ic. fo	 r	••••	.10.	. Н. Г. Т	. Su 3. (nngar Fovett	d e	
Fireproof build	ing	c	on	stru	cti	n H.	i	Hinto	n	
Fireproof door, Flour-handling	Н	oll	оу Н.	ў Р.	 А.	A.	Eic	hman	n m	
Flour-handling Flower-holder	ap und	pai l i	ns	us. ect-	traj	в Р Т .	r, J R	. WOD	·	
Fluid-eirculatin	g	a p	pa	ratu .G	s	. D.	istl	e et s	i	
Fluid-motor Flux for brass	pla	itir	ig.	··w	S	.C. Re	F. eke	Bonite ey et a	z	
Flux for prote	cti	ng	2	ba	th S	$\frac{\text{of}}{\text{Re}}$	eo _l	oper o	r	
Flour-handling Flower-holder (Fluid-eirculatin Fluid-motor Flux for brass Flux for prote brass Folding box an Folding chair Foot-rest Foot-support.	d	era	ite 		.A.	E.	E	. Lace igstroi	y n	
Foot-rest Foot-support Foundry plant,	 P	inc	• • •		• • • •		.Н. Г.	липа , Cohe Herber	n :t	
Fruit-picker Fruit-picker Fumigator				• • • •		S A.	. J J. 1	May Peterty	vl vl	
rumigator			٠.		·	W.	J.	feGuir	111	

and the department of	Paring and The Watering and
ounterpane or bedspread	Furnaces, Charging electric-resistance
ow-tail holder	Furs or skins, Device for stretching
ranking deviceR. H. Clifton ross-headF. H. Smith	Fuse-batteryA. E. Porter et al
niinary articleS. B. Harrison ulvert, MetalC. M. Porter	Fuse for projectiles, Percussion
uspidorL. Jakab	Fuse, Percussion. H. B. Strange E. Schneider
ut-out. AntomaticN. A. Wright ntter-head, RotaryJ. J. W. Alexander	Gage-tableR. C. Dayton GameH. W. Fachmann
ycle gearing, MotorF. S. Jones ycles and other self-propelled vehicles,	Game, Ball. A. C. Nelson Game-board. W. S. Woodrnff
Seat for motor	Game-table
ampening-machine	GarmentJ. Cohen Gas burner, NaturalC. E. Bunner
ampening the extra-thick end seams of eollars, Machine for	Gas-engine
andy-rollJ. J. Plank	Gas generator, AcctyleneM. S. Mishler
ental air-pumpE. Messmer ental easting-machineW. F. Lawrenz	Gas manufacturing apparatusB. Loomis Gas-meterF. C. Viney
etinningF. von Kngclgen et al ish-washerC. J. O. Bergstrom	Gasket-toolE. Gibson et al Gear, Change-speedP. L. M. Godeau
isplay-case	Gear-wheel, Donble helicalT. Fawens
isplay device	Gearing
	Globe, shade and chimney holder
isplay-rackJ. McLaughlin istilling systemE. H. De Lany	Grafting
ocks, BuildingT. N. Berge	P. Provost
oor-check	Grains, Cleaning and separating
oor-hanger	Grate
oor-hanger track and support	Grinder for ensilage-cutter and other knives E. J. Young
raft appliance. W. W. Winger raft-equalizer. D. W. McNatt	Grinding bran
raft gear, RadialE. II. Schmidt	Grinding-machine
rill dust-catcher	Gunboat and torpedo-boat, Semisubmerged submarine
tachment forF. A. Kirby	HacksawJ. T. Nacey
rilling device, RatchetA. P. Johnsen ust-collectorU. Joedicke	Hair-holder C. A. Brannen Hair-pin L. T. Harkness
yeing and product thereof. 2 pats	Harness attachmentC. C. Rose HarrowJ. E. Booth
yestuff for wool. Yellow disazo2 pats	Harrow
arth-hole-forming machine for weed-ex-	Hat-brim conformator curling-machine
terminating purposesJ. Prisk conomizerA. A. Low	Hay-carrierH. L. and H. J. Ferris
ducational noveltyM. Stocklmier gg-cupE. E. A. MacNaughton	Hay-loaderC. H. Sics HeadlightR. H. Welles
lectric-cable retriever	Heating apparatus, Hot-water. H. A. Bolze Heating systems, Gas-heating attachment
	for pipes of
lectric ignition applianceA. M. Low lectric machine, Dynamo2 pats	Heddle-frameG. Nuttall Heel, CushionW. H. Watson
	Hinge
B. A. Behrend lectric switch. W. S. Mayer	HornC. C. Michael et al HornE. A. Leet
lectric switchS. P. Watson	Horse-detacherJ. W. Corsey
lectric switchL. W. Horting lectrical heaterM. H. Shoenberg et al	Hosiery form and holderJ. Huebsch Hydraulic jackB. Worthington
lectricity, Method of and apparatus for generatingB. Schwerin	Hydrocarbon-burnerG. J. McPherson Ice-cream freezerT. J. Harton
levating, transporting and discharging material, Apparatus forT. S. Watson	Induction-motorJ. E. Webster Ink-distributerA. E. Berreycsa
levator door Sidewalk C G Janson	InsulatorJ. T. Klugh Insulator II. R. Markel
mbalming-couch, Extension. C. Nugent ngine. C. J. Lake	Insulator, TreeA. L. Pierce Internal-combustion engineT. Reuter
ngine-exhaust-valve water connection, Gas	Internal-combustion engine
ngine ignition-timer, Internal-combustion F. C. Mason	D. Roberts et al Internal-combustion engine, Liquid-fuel
ngines, Charge-forming device for internal-combustion	Ironing-boardG. E. Lilly et al
ngraving-machineW. Steers nyelopS. T. Wingeier	Irrigating aparatus
invelop-loading machines, &c., Cutting	Jar holder, Frnit
mechanism forJ. R. Williams et al excavating and loading machine	Kiln, furnace, &cH. O. Robinson et al
L. Kercher xplosive-engine. J. H. Fiteb	Knitting-machine yarn-changing mechan- ism, Automatic
yeglasses and spectacles, Rimless	Knitting-machines, &c., Stop device for E. Paquette et al.
an	Knockdown boxP. C. Thayer Label-pasting deviceW. Sutton
E. S. Bucknam	LadderF. S. Plaisted LadderN. W. Henning
arc-register-operating mechanismJ. F. Ohmer astening for garment-supports, Detachable	Ladder attachmentR. and W. Holdorf
astening for garment-supports, Detachable Astening for garment-supports, Detachable	Ladder-bracketR. A. Holdridge LampC. Orgaard
A. Vanderveld at and other substances, Machine for cuttingE. E. Motter	Lamp, GasE. J. Wiggins Lamp sockets and the like, Securing means
ancetE. W. Tuerk et al	for electric
aucet attachmentS. E. Gladding aucet, Self-closingJ. P. Farley	Lamps, Machine for manufacturing incan- descent
Yeod-water heater	Lantern E. T. Scanlon Lantern, Moving-picture projecting
Perrule-making toolR. A. Merrill Pertilizer-distributers, Conveyer-apron for	Lathe, TurretB. M. W. Hanson
E. Buswell et al	Leaf-support2 patsT. Hauser Lemon-scrverE. F. Symonds et al
Pertilizer, Manufacture ofL. R. Coates Filling-machineL. Jaeger	Level
rire-alarmW. C. Matthias rire-extinguisher, AutomaticM. Andrews	Leveling and grading instrumentL. T. Hull
Firearm, AutomaticH. Sunngard	Lighting-fixture. 2 pats. F. W. Wakefield Loading apparatus. W. T. Scott
Sirongoof building construction	Locking-boitW. T. S. Diekey LoomF. Ott
H. L. Hinton	Loom-dobby
H. P. A. A. Eichmann Clour handling apparatus. F. J. Wolff	Looms, Thread-cutting device for automatic
Flower-holder and insect-trap	weft-replenishingJ. Martinek
	Magnetic brakeC. Shears Magnetic separatorF. O. Schnelle
Fluid-motor	Mail delivering and eollecting apparatus T. Middlebrook
Flux for protecting a bath of copper or brass W. S. Rockey et al	Manifolding deviceE. E. Brunson Manure-spreader for wagons. 2 pats
Folding box and erate E. Lacey Folding chair A. E. Engstrom	P. L. Fortin
Foot-restJ. Flindall	Metal wheel
Foot-support	Milk outlet in eentrifugal separators, Blue
H. K. Rowland et al	Milking-machineJ. L. Hulbert
Fruit-pickerS. J. Mays Fruit-pickerA. J. Petertyl	Milling-machineC. L. Grohmann Mine-timbering machineJ. C. Pardue
FumigatorW. J. Shelton FurnaceW. H. McGuire	Mold

	U	T. Ramsuen
Molding appar	p J. ratus. support	.W. H. Lose
Mop-wringing Mortising-hit	supportC.	E. Strating
Motor	D.	F. Lawrence
Nail-extractor		A. Dettmann
Nan or screw Nozzle	caseF.	A. Billstone I K Beaver
Nut-lock	· · · · · · · · · · · · · · · · · · ·	J. Mills
Nnt-lock	J. V urnace	C. C. Rankin
Nut-lock Nut-lock		V. J. Murphy
Nnt-lock		C. Pfister
Nut-lock		S. Paterson
On-burning 10 Ointmen <i>t-</i> base	es, Making artific	zial
	ment	S. Knopf
Optical instru Ora concentra	ment	r. A. Somdal
Ore-scharator,	MagneticA.	G. Holmberg
Packing, Pist	ou	J. Dittrich
Pan, Lunca. Pail Ovster		W Hevselv
Pans, Dies fo	r making	E. Katzinger
Paper hags, M	r making	A. L. Parrish
raper-board 1	nachine, Corruga	tea
Paper-board	machine, Corrug	ated
Panar fooding	and H. G. McPi	ke, Jr., et al
Paper-machin	е	.P. R. Thom
Party-line rin	ging-key, Four	A. H. Weiss
Pen, Fountaii Pencil protect	n or and retainer	D. Gallagner
Pencil-sharpe	ner cutter	J. P. Casey
Phonograph-r	eproducerH.	B. McNulty
moving	F. A	. Schimanski
Phonographic	record album	M. Lewis
Pnotographic	films, Apparatus	for handling
Pianos, Kev-l	ock for auto	W. F. Bayer
Pianos, Playe	er for	A. T. Young
ricker-stick	I	g. H. Nabhan
_ moving	films, Apparatus ock for auto er for	E. Hogland
Picture machi	ine, Moving 2 pa	its
Picture mach	ine. MovingG.	W. Bingnam
Picture mach	ine, Moving	J. Keller
Picture mach	ine, MovingE.	H. Sperberg
imated	outleing colored .	E. Hoglund
Pigment-color	rF.	Runkel et al
Pile fabric	· · · · · · · · · · · · · · · · · · ·	.G. Crossland
Pipe-threadin	gW	V. W. Vosper
Planer attach	C. C. g. W. W. W. W. C. g. C. g. C. C. g. D. C.	rs
Planter and f	D. ertilizer-distribut	ter. Combined
seed		. D. Lemous
Plastic mater	rial, Machine for	r forming
Platc-lifter	• • • • • • • • • • • • • • • • • • • •	W. F. Brown
Plow and har	row, Combination	n. J. T. Boyd
Plow draft ap	ppuance verizing attachme	.W. L. White
		. W. Roberts
Pocket-case	retilizer-distribut W rial, Machine for row, Combination ppliance verizing attachmo J ring. Combination	B. Bell
Poke, Animal	l	O. O. Clark
Poke, Animal		. Kelley ct al
Poke. Animal Portable lock	for doors and v	'. Kelley ct al
Poke. Animal Portable lock	for doors and v	'. Kelley ct al
Potato-digger	for doors and v	vindows A. C. Bates R. Rohr
Potato-digger	for doors and v	vindows A. C. Bates R. Rohr
Potato-digger	for doors and v	vindows A. C. Bates R. Rohr
Potato-digger	for doors and v	vindows A. C. Bates R. Rohr
Poke, Animal Portable lock Potato-digger Potato-digger Potato-fork, Power-press s Preserving of Printing made	for doors and v stop mechanism. G. W. compound. J. bine. 2 pats.	. Kelley ct al vindows
Poke, Animal Portable lock Potato-digger Potato-digger Potato-fork, Power-press s Preserving of Printing made	for doors and v stop mechanism. G. W. compound. J. bine. 2 pats.	. Kelley ct al vindows
Poke, Animal Portable lock Potato-digger Potato-digger Potato-fork, Power-press s Preserving of Printing made	for doors and v stop mechanism. G. W. compound. J. bine. 2 pats.	. Kelley ct al vindows
Poke, Animal Portable lock Potato-digger Potato-digger Potato-fork, Power-press s Preserving of Printing made	for doors and v stop mechanism. G. W. compound. J. bine. 2 pats.	. Kelley ct al vindows
Poke, Animal Portable lock Potato-digger Potato-digger Potato-fork. Power-press s Preserving contributing mace Printing-mace Propelling mace Pulp, Apparasheets of.	for doors and vestop mechanism. G. W. Dine 2 pats. hine inking devections for the manner. D. M. Sutherla	. Kelley ct al vindows A. C. Bates
Poke, Animal Portable lock Potato-digger Potato-digger Potato-fork. Power-press s Preserving contributing mace Printing-mace Propelling mace Pulp, Apparasheets of.	for doors and vestop mechanism. G. W. Dine 2 pats. hine inking devections for the manner. D. M. Sutherla	. Kelley ct al vindows A. C. Bates
Poke, Animal Portable lock Potato-digger Potato-digger Potato-fork. Power-press s Preserving contributing mace Printing-mace Propelling mace Pulp, Apparasheets of.	for doors and vestop mechanism. G. W. Dine 2 pats. hine inking devections for the manner. D. M. Sutherla	. Kelley ct al vindows A. C. Bates
Poke, Animal Portable lock Potato-digger Potato-digger Potato-fork. Power-press s Preserving contributing mace Printing-mace Propelling mace Pulp, Apparasheets of.	for doors and vestop mechanism. G. W. Dine 2 pats. hine inking devections for the manner. D. M. Sutherla	. Kelley ct al vindows A. C. Bates
Poke, Animal Portable lock Potato-digger Potato-digger Potato-fork. Power-press s Preserving contributing mace Printing-mace Propelling mace Pulp, Apparasheets of.	for doors and vestop mechanism. G. W. Dine 2 pats. hine inking devections for the manner. D. M. Sutherla	. Kelley ct al vindows A. C. Bates
Poke, Animal Portable lock Potato-digger Potato-digger Potato-fork. Power-press s Preserving contributing mace Printing-mace Propelling mace Pulp, Apparasheets of.	for doors and vestop mechanism. G. W. Dine 2 pats. hine inking devections for the manner. D. M. Sutherla	. Kelley ct al vindows A. C. Bates
Poke, Animal Portable lock Potato-digger Potato-digger Potato-fork. Power-press s Preserving contributing mace Printing-mace Propelling mace Pulp, Apparasheets of.	for doors and vestop mechanism. G. W. Dine 2 pats. hine inking devections for the manner. D. M. Sutherla	. Kelley ct al vindows A. C. Bates
Poke, Animal Portable lock Potato-digger Potato-digger Potato-fork. Power-press s Preserving contributing mace Printing-mace Propelling mace Pulp, Apparasheets of.	for doors and vestop mechanism. G. W. Dine 2 pats. hine inking devections for the manner. D. M. Sutherla	. Kelley ct al vindows A. C. Bates
Poke, Animal Portable lock Potato-digger Potato-digger Potato-fork. Power-press s Preserving contributing mace Printing-mace Propelling mace Pulp, Apparasheets of.	for doors and vestop mechanism. G. W. Dine 2 pats. hine inking devections for the manner. D. M. Sutherla	. Kelley ct al vindows A. C. Bates
Poke, Animal Portable lock Potato-digger Potato-digger Potato-fork. Power-press s Preserving contributing mace Printing-mace Propelling mace Pulp, Apparasheets of.	for doors and vestop mechanism. G. W. Dine 2 pats. hine inking devections for the manner. D. M. Sutherla	. Kelley ct al vindows A. C. Bates
Poke. Animal Portable lock Potato-digger Potato-digger Potato-digger Potato-fork. Power-press some Preserving control of Printing-mach Propelling method printing-mach Propelling method pump. Pulp. Apparasheets of Sutherland, Pump. Centre Pump. Centre Pump. Centre Pump. Centre Pump. Crean Pump-rod con Punch. Regis Punching-ma Raft appliant Rail-anchor. Railway-rail Railway-trae Ra	for doors and vertical for doors and the first for the man of	. Kelley et al vindows
Poke. Animal Portable lock Potato-digger Potato-digger Potato-digger Potato-fork. Power-press some Preserving control of Printing-mach Propelling method printing-mach Propelling method pump. Pulp. Apparasheets of Sutherland, Pump. Centre Pump. Centre Pump. Centre Pump. Centre Pump. Crean Pump-rod con Punch. Regis Punching-ma Raft appliant Rail-anchor. Railway-rail Railway-trae Ra	for doors and vertical for doors and the first for the man of	. Kelley et al vindows
Poke. Animal Portable lock Potato-digger Potato-digger Potato-digger Potato-fork. Power-press some Preserving control of Printing-mach Propelling method printing-mach Propelling method pump. Pulp. Apparasheets of Sutherland, Pump. Centre Pump. Centre Pump. Centre Pump. Centre Pump. Crean Pump-rod con Punch. Regis Punching-ma Raft appliant Rail-anchor. Railway-rail Railway-trae Ra	for doors and vertical for doors and the first for the man of	. Kelley et al vindows
Poke. Animal Portable lock Potato-digger Potato-digger Potato-digger Potato-fork. Power-press some Preserving control of Printing-mach Propelling method printing-mach Propelling method pump. Pulp. Apparasheets of Sutherland, Pump. Centre Pump. Centre Pump. Centre Pump. Centre Pump. Crean Pump-rod con Punch. Regis Punching-ma Raft appliant Rail-anchor. Railway-rail Railway-trae Ra	for doors and vertical for doors and the first for the man of	. Kelley et al vindows
Poke. Animal Portable lock. Potato-digger Potato-digger Potato-fork. Power press serving of Printing-mac Propelling metalogue. Propelling metalogue. Propelling metalogue. Propelling metalogue. Propelling metalogue. Pump. Apparasheets of Sutherland. Pump. Centr. Pump. Centr. Pump. Centr. Pump. Centr. Pump. Crean Pump-rod con Punch. Regis Punching-ma Raft appliant Rail-anchor. Railway-rail Railway-trac Rai	for doors and vertical stop mechanism. G. W. M.	. Kelley et al vindows
Poke. Animal Portable lock. Potato-digger Potato-digger Potato-fork. Power press serving of Printing-mac Propelling metalogue. Propelling metalogue. Propelling metalogue. Propelling metalogue. Propelling metalogue. Pump. Apparasheets of Sutherland. Pump. Centr. Pump. Centr. Pump. Centr. Pump. Centr. Pump. Crean Pump-rod con Punch. Regis Punching-ma Raft appliant Rail-anchor. Railway-rail Railway-trac Rai	for doors and vertical stop mechanism. G. W. M.	. Kelley et al vindows
Poke. Animal Portable lock. Potato-digger Potato-digger Potato-fork. Power press serving of Printing-mac Propelling metalogue. Propelling metalogue. Propelling metalogue. Propelling metalogue. Propelling metalogue. Pump. Apparasheets of Sutherland. Pump. Centr. Pump. Centr. Pump. Centr. Pump. Centr. Pump. Crean Pump-rod con Punch. Regis Punching-ma Raft appliant Rail-anchor. Railway-rail Railway-trac Rai	for doors and vertical stop mechanism. G. W. M.	. Kelley et al vindows
Poke. Animal Portable lock. Potato-digger Potato-digger Potato-fork. Power press serving of Printing-mac Propelling metalogue. Propelling metalogue. Propelling metalogue. Propelling metalogue. Propelling metalogue. Pump. Apparasheets of Sutherland. Pump. Centr. Pump. Centr. Pump. Centr. Pump. Centr. Pump. Crean Pump-rod con Punch. Regis Punching-ma Raft appliant Rail-anchor. Railway-rail Railway-trac Rai	for doors and vertical stop mechanism. G. W. M.	. Kelley et al vindows
Poke. Animal Portable lock. Potato-digger Potato-digger Potato-fork. Power press serving of Printing-mac Propelling metalogue. Propelling metalogue. Propelling metalogue. Propelling metalogue. Propelling metalogue. Pump. Apparasheets of Sutherland. Pump. Centr. Pump. Centr. Pump. Centr. Pump. Centr. Pump. Crean Pump-rod con Punch. Regis Punching-ma Raft appliant Rail-anchor. Railway-rail Railway-trac Rai	for doors and vertical stop mechanism. G. W. M.	. Kelley et al vindows
Poke. Animal Portable lock Potato-digger Potato-digger Potato-fork. Power press serving of Printing-mac Printing-mac Propelling metable printing-mac Propelling metable printing-mac Propelling metable propelling propelling Pump. Centricular Propelling Potato Printing Propelling Propellin	for doors and very stop mechanism. G. W. Marken M. J. Marken M. J. Marken M. Sutherla M. Sutherla M. Sutherla M. Sutherla M. M. M. Sutherla M. M. M. Sutherla M.	. Kelley et al windows
Poke. Animal Portable lock Potato-digger Potato-digger Potato-fork. Power press serving of Printing-mac Printing-mac Propelling metable printing-mac Propelling metable printing-mac Propelling metable propelling propelling Pump. Centricular Propelling Potato Printing Propelling Propellin	for doors and very stop mechanism. G. W. Marken M. J. Marken M. J. Marken M. Sutherla M. Sutherla M. Sutherla M. Sutherla M. M. M. Sutherla M. M. M. Sutherla M.	. Kelley et al windows
Poke. Animal Portable lock Potato-digger Potato-digger Potato-fork. Power press serving of Printing-mac Printing-mac Propelling metable printing-mac Propelling metable printing-mac Propelling metable propelling propelling Pump. Centricular Propelling Potato Printing Propelling Propellin	for doors and very stop mechanism. G. W. Marken M. J. Marken M. J. Marken M. Sutherla M. Sutherla M. Sutherla M. Sutherla M. M. M. Sutherla M. M. M. Sutherla M.	. Kelley et al windows
Poke. Animal Portable lock Potato-digger Potato-digger Potato-fork. Power press serving of Printing-mac Printing-mac Propelling metable printing-mac Propelling metable printing-mac Propelling metable propelling propelling Pump. Centricular Propelling Potato Printing Propelling Propellin	for doors and very stop mechanism. G. W. Marken M. J. Marken M. J. Marken M. Sutherla M. Sutherla M. Sutherla M. Sutherla M. M. M. Sutherla M. M. M. Sutherla M.	. Kelley et al windows
Poke. Animal Portable lock Potato-digger Potato-digger Potato-fork. Power press serving of Printing-mac Printing-mac Propelling metable printing-mac Propelling metable printing-mac Propelling metable propelling propelling Pump. Centricular Propelling Potato Printing Propelling Propellin	for doors and very stop mechanism. G. W. Marken M. J. Marken M. J. Marken M. Sutherla M. Sutherla M. Sutherla M. Sutherla M. M. M. Sutherla M. M. M. Sutherla M.	. Kelley et al windows
Poke. Animal Portable lock Potato-digger Potato-digger Potato-fork. Power press of Preserving of Printing-mac Propelling metalenger Potato-fork. Power press of Preserving of Printing-mac Propelling metalenger Popelling	for doors and very stop mechanism. G. W. Marken M. J. Mine. 2 pats. hine inking develochanism, Reactions for the management of the manag	. Kelley et al vindows
Poke. Animal Portable lock Potato-digger Potato-digger Potato-fork. Power press of Preserving of Printing-mac Propelling metalenger Potato-fork. Power press of Preserving of Printing-mac Propelling metalenger Popelling	for doors and very stop mechanism. G. W. Marken M. J. Mine. 2 pats. hine inking develochanism, Reactions for the management of the manag	. Kelley et al vindows
Poke. Animal Portable lock Potato-digger Potato-digger Potato-fork. Power press of Preserving of Printing-mac Propelling metalenger Potato-fork. Power press of Preserving of Printing-mac Propelling metalenger Popelling	for doors and very stop mechanism. G. W. Marken M. J. Mine. 2 pats. hine inking develochanism, Reactions for the management of the manag	. Kelley et al vindows
Poke. Animal Portable lock Potato-digger Potato-digger Potato-fork. Power press of Preserving of Printing-mac Propelling metalenger Potato-fork. Power press of Preserving of Printing-mac Propelling metalenger Popelling	for doors and very stop mechanism. G. W. Marken M. J. Mine. 2 pats. hine inking develochanism, Reactions for the management of the manag	. Kelley et al vindows
Poke. Animal Portable lock Potato-digger Potato-digger Potato-fork. Power press of Preserving of Printing-mac Propelling metalenger Potato-fork. Power press of Preserving of Printing-mac Propelling metalenger Popelling	for doors and very stop mechanism. G. W. Marken M. J. Mine. 2 pats. hine inking develochanism, Reactions for the management of the manag	. Kelley et al vindows
Poke. Animal Portable lock Potato-digger Potato-digger Potato-fork. Power press serving of Printing-mac Propelling metabolish propelling prope	for doors and very stop mechanism. G. W. Marken M. J. Mine. 2 pats. hine inking develochanism, Reactions for the management of the manag	. Kelley et al vindows
Poke. Animal Portable lock Potato-digger Potato-digger Potato-fork. Power press serving of Printing-mac Propelling metabolish propelling prope	for doors and very stop mechanism. G. W. Marken M. J. Mine. 2 pats. hine inking develochanism, Reactions for the management of the manag	. Kelley et al vindows
Poke. Animal Portable lock Potato-digger Potato-digger Potato-fork. Power press serving of Printing-mac Propelling metabolish propelling prope	for doors and very stop mechanism. G. W. Marken M. J. Mine. 2 pats. hine inking develochanism, Reactions for the management of the manag	. Kelley et al vindows
Poke. Animal Portable lock Potato-digger Potato-digger Potato-fork. Power press serving of Printing-mac Propelling metabolish propelling prope	for doors and very stop mechanism. G. W. Marken M. J. Mine. 2 pats. hine inking develochanism, Reactions for the management of the manag	. Kelley et al vindows
Poke. Animal Portable lock	for doors and very stop mechanism. G. W. Marken M. J. Mine. 2 pats. hine inking develochanism, Reactions for the management of the manag	. Kelley et al vindows

Saw-clampJ. Auer	
Saw-clampJ. Auer Saw filing and setting machine S. D. Benoliel	
Saw tensioning and moving machine, Band	•
Saw-tooth fasteningS. F. Davis	
Scaffold-bracket	1
Scales, Corner-bracket for pitless wagon.	
Scales, Corner-bracket for pitless wagon. G. Jones Screen	,
Seal for cocks, Sheet-metal	
Seed-hopperP. C. Mitchell	
SeederJ. M. Granthain Sewing-machine guideA. L. Richolson	9
Sewing-machine tension-indicator	,
Shade bracket, Window. F. A. Goppelt, Jr. Shaft-lining. 2 patsR. M. Davo et al	
Sheet-trimming and edge-folding machine	
Shelving	
Shock-absorberE. Prouty Shoe-tieD. W. Conard	
Shoe-tree	
Sickle	
Biever	
Sifter, Ash	
issue)	1
ofG. Donauer	
Skirt-protector, CatamenialM. M. Kline Slag-disintegratorE. Lamb	
Sleeve, Garment	
Soles of boots and shoes, Machine for trim-	
Spark-arresterE. A. Bishop	
Speed mechanism, ChangeK. W. Grant	
Gribe puller	
Spool, Mctallic take-up P. Welin	
Spring-wheelR. and G. H. Welford Square, SeparableS. C. Humpbries	,
Square. Try	
Stacker, Hay	,
Stamp-affixing machineC. E. Van Duzer Stanchion, CattleW. H. Flewell	-
Stanchion, Cattle	-
Steam generator with water-immersed	1
flameO. H. U. Brunler	1
Skirt-protector, Catamenial. M. M. Kline Slag-disintegrator. E. Lamb Sleeve, Garment. S. Karp Smoke-recording apparatus. R. L. Eddy Soles of boots and shoes, Machine for trimming the. A. S. Vose Spark-arrester. E. A. Bishop Sparking plug, Electromagnetic. E. Kuhn Speed mechanism, Change. K. W. Grant Speed mechanism, Variable. G. E. Witherel et al Spike-puller. J. B. Miller Spool, Metallic take-up. P. Welin Spring-wheel. R. and G. H. Welford Square. Separable. S. C. Humpbries Square. Try. M. Dickson Stacker, Grain. A. Hasper Stacker, Grain. A. Hasper Stacker, Pneumatic. J. K. Sharpe, Jr. Stamp-affixing machine. C. E. Van Duzer Stanchion, Cattle. W. H. Flewell Stanchion, Cattle. W. H. Dooley Stay-bolts, Mannfacture of. G. S. Thompson Steam-generator with water-immersed flame. O. H. U. Brunler Steam-trap. Boller-feed and water-meter.	7
Steam-trap. J. R. Tanner Steam-trap, holler-feed and water-meter G. W. Cole Stone-dressing machineW. H. Van Sickel Stone-saw. E. P. Hanson et al Stone-matien. J. McGinnig	1
Stone-dressing machineW. H. Van Sickel Stone-sawE. P. Hanson et al]
Stop-motionJ. McGinnis Storage-receptacleR. J. Gibbon	
Stove	
Stone-saw E P Hanson et al Stop-motion J McGinnis Storage-receptacle R J Gibbon Stove H P Spencer Reversible Block of the Stove Gasolene A J Blackford Stoves, Pilot-light for gas E R Mayer et al Street-sweeper H H Brooks Superheater W F Buck et al Supporting device, Adjustable A V Brown Surgical appliance A J Petter Switch and circuit-breaker for high-potential circuits J N Kelman Switch-button, Indicating J A York Switch structure C N Glynn Tag F H Thompson Tag-machine H L Roth	
Street-sweeperH. H. Brooks Superheater W. F. Buck et al.	
Supporting device, Adjustable	4
Surgical applianceA. J. Petter	2
Switch and circuit-breaker for high-poten-	Ā
Switch-button, IndicatingJ. A. York	Ā
TagF. H. Thompson	Ā
Tag-machine	Ā
Telegraph-keyF. G. Slemmer	A
wirelessE. J. Simon	A
Telegraph systems, Spark-gap for radiotone wireless. E. J. Simon Telephone-mouthplece attachment. A. P. Levi et al Telephone-receiver handle. C. A. Barnes, Sr. Telephone system A. H. Dyson Telephone trunking system. C. S. Winston Tempering. W. E. Nickerson Tennis-racket. C. B. Mueller Tent. O. E. Hollister Textile material in lengths, Apparatus for treating. I. E. Palmer Textile materials, Apparatus for smoothing hanks of. A. Clavel Theatrical appliance. R. J. Denny Thermo-electric couple. A. L. Marsh	A
Telephone-receiver handle	A
Telephone systemA. H. Dyson Telephone trunking systemC. S. Winston	A
Tempering	A
Tent	P
treatingI. E. Palmer Textile materials, Apparatus for smooth-	E
ing hanks of	В
Thermo-electric coupleA. L. Marsh Thill-couplingW A Buchanan	B
	В
Thread-cutting dle	
Thread-cutting dle. G. E. Hill Ticket or tag hook. F. S. Webster Tire-inflating device. R. Barnfather Tire-ventilating device.	В
Thread-cutting dle. G. E. Hill Ticket or tag hook. F. S. Webster Tire-inflating device. R. Barnfather Tire-ventilating device. D. Rawstron Tobacco-stringing machine. C. G. Wells	В
Thread-cutting die	B B B
Thread-cutting die. G. E. Hill Ticket or tag hook. F. S. Webster Tire-inflating device. R. Barnfather Tire-ventilating device. D. Rawstron Tobacco-stringing machine. C. G. Wells Toilet. G. J. Burkhardt Toilet articles for personal wear, Apparatus for making. J. Wilcox Tool-holder. W. A. Petersen	B B
Theatrical appliance	B B B B
Tool-socket I. Grogson	B B B B B B
Tool-socketL. Gregson Torpedo-firing apparatus, Gyroscopically- controlledC. Davis Trace and backer loop. A. D. Baird	B B B B B
Tool-socket	B B B B B B B B B B B B B B B B B B B
Tool-socket. L. Gregson Torpedo-firing apparatus, Gyroscopically- controlled. C. Davis Trace and backer loop. A. D. Baird Trace-support and pad-loop, Adjustable R. W. Brooks Transit. A. N. Buckner Transplanting-pot. L. S. Lundy	B B B B B B B B B B B B B B B B B B B
Tool-socket	B B B B B B B B B B B B B B B B B B B
Tool-socket	B B B B B B B B B B B B B B B B B B B
Tool-socket. L. Gregson Torpedo-firing apparatus, Gyroscopically- controlled. C. Davis Trace and backer loop. A. D. Baird Trace-support and pad-loop, Adjustable R. W. Brooks Transit. A. N. Buckner Transplanting-pot. L. S. Lundy	B B B B B B B B B B B B B B B B B B B

Turbine, SteamJ. F. M. Patitz Turbine. SteamT. R. Morgan et al Turn-tableA. O. Slentz Twyer furnace, Continuous Type-bar bearingC. W. Munson Type-writer attachmentM. Einstein Type-writing machine
Type-bar bearing
Type-writing machine. A. T. Brown Type-writing machine. G. A. Seib Type-writing machine. J. Waldheim Type-writing machine. O. Woodward Type-writing machine. C. B. Yaw Type-writing machine. 2 pats.
Type-writing machine H. S. McCormack Type-writing machine E. L. Pfunder Type-writing machines, Autographic-regis- ter stand for E. J. Barker Umbrella-stand K. Detzner
Type-bar bearing M. Zepeda Type-writer attachment M. Einstein Type-writing machine V. A. E. Sivertsen et al Type-writing machine A. T. Brown Type-writing machine A. T. Brown Type-writing machine G. A. Seib Type-writing machine O. Woodward Type-writing machine O. Woodward Type-writing machine C. B. Yaw Type-writing machine G. F. Ballou Type-writing machine E. L. Pfunder Type-writing machine E. L. Pfunder Type-writing machine E. L. Pfunder Type-writing machine E. J. Barker Umbrella-stand K. Detzner Undergarment W. W. Brewsic Vacuum-sweeper A. E. Clifton et al Vacuum-sweeper A. E. Clifton et al Valve C. F. Siegrist Valve Electrically-operated P. A. Brown Valve Gate J. N. Gilbert Valve Non-return J. R. Tanner Valve Pressure-reducing T. P. Ford Valve Qnick-opeuing W. L. Osborne Vegetable-cutter F. L. Mayer Vebicle controller, Motor A. Winton Vending machine, Stamp or ticket W. M. Fulton Ventilator R. W. Martin Vessels, Self-closing joint for Granges Voting-machine J. H. Dean Wagon bracket, Farm J. Kaminski Wall, Temporary T. C. Clarke Walls, Making tubnlar metal W. M. Fulton Washhasin J. Hartness Washing and cleaning machine for textific fabrics and the like P. Gungerich Washing-machine G. Wachenfeld Water-closet, Portable sanitary P. F. Tarnawski Water-motor E. R. McCreary Weeder, Track D. A. Chisholm Welding, cutting or soldering metals, Auto- genous .* B. Hoffman Well-drilling macbinery, Crank-pin connection for J. F. Keith
Valve, Pressure-reducingT. P. Ford Valve, Qnick-opeuingW. L. Osborne Vegetable-cutterF. L. Mayer Vebicle controller, MotorA. Winton Vending machine, Stamp or ticket H. D. Ebert VentilatorR. W. Martin
Vessels, Self-closing joint for . L. Granges Voting-machine . J. H. Dean Wagon bracket, Farm . J. Kaminski Wall, Temporary . T. C. Clarke Walls, Making tubnlar metal . W. M. Fulton
Washinsin
Water-motor. E. R. McCreary Weeder, Track. D. A. Chisholm Welding, cutting or soldering metals, Auto- genous.* B. Hoffman Well-drilling macbinery, Crank-pin connec- tion for J. F. Keith Wells, Apparatns for forcing fluids from W. C. Holliday Welt-forcing machine. J. B. Hadaway Windlass. C. Andrade, Jr. Window C. Hedwig
W. C. Holliday Welt-foreing machine. J. B. Hadaway Windlass. C. Andrade, Jr. Window. C. Hedwig Window-pane fastener W. N. Baker Window-screen. J. B. Ogborn Wire-netting. A. E. Barlow
Wire-stretcher
WrenchJ. Boulieu DESIGNS.
RingL. A. Larson TrophyA. G. Spalding Tumblers or other articles, Holder for H. B. Taylor
Issued October 11, 1910.
MECHANICAL PATENTS.
Account apparatus, CreditJ. T. Brooke

Acetylene-generatorF. E. Stover
Adjustable and quick-acting clamp
Advertising device, Moving. S. J. Scott Air-brake pressure-regulator. D. H. Downey Air-compressor. A. O. Carpenter Air-compressor. W. L. Crane Air-filter 2 pats C. Caustrum
Air-brake pressure-regulator. D. H. Downey
Air-compressor
Air-compressor
Alloy. AntifrictionJ. R. Stratton Amusement apparatusP. Wintermute
Amusement apparatusP. Wintermute
Anchor Ground J Wilcox
Amusement apparatusG. A. Budge Anchor, GroundJ. Wilcox Antiskidding device for automobiles
Antiskidding device for automobiles
ApplicatorA. D. Foster
AugerJ. Frahlich
Automobile steering wheels Locking device
for
Automobile-wheels, Armor for, V. L. Bekefi
Antomobiles, Lever-lock forH. Hood
Bag-fastener
Bail, Well-bucketF. D. Walpole
Barrel W. J. Ward
Bath apparatus, ShowerG. Winters
Battery circuit controller and tester. Stor-
age
Bed Folding I B Toffcott
Bed, table and seat. Folding
Beds, Leg-mounting for uplifting
Podalothog holder
Redstead Sofa M. Thomson
Bench-dog. Adjustable J. Eletcher
Berry-boxP. Henrich
Bearing, Spindle step D. N. Wild Bed, Folding L. B. Jeffcott Bed, Folding
Bieveles Divoted has for the healt feeler
Bill-fold
Bill-fold
Billiard-cue rack
Bit-bolder
Blades with soft content Making
O A Clark
Block-signal mechanism. Electrically-oper-
ated
BlowpipeJ. H. Flower
Boiler deviceF. Nielson
Block-signal mechanism, Electrically-operated
Boiler-flue, DetachableJ. M. Crozier

,	, , , , , , , , , , , ,	3 4 2 3 3 3	-
Bo Bo	ster		I. T. Krakau
Bo	kbinder's gluing-	pressJ. G	iesecke et al
Bo	tle, Non-refillabl	e I .	B. Solomon
Bo Bo	ster	its	C. Appleton E. S. Church
Bo	vling-alley, Ports	ibleJ	. E. Noonan
Bra Bra	id		W. C. Heller R. C. Rabm
Bra Bri	ke-shoe	C.	A. Malcolm
Bri	ek-kiln and proce	ess of burni	ng bricks
Bri	ck, tile and bui		. H. Francis s. Press for
n Pui	aking	•••••	.G. Hoffman
Bro	om-corn knife		W. Hanson
Bri	ıslı, Toilet ıdling-machine	\dots G. L	Street, Jr.
Bu	ton, Bachelor	E.	V. Winston
Ca. Ca	oinet, Commodity oinet, Label and	ticketC. V	.J. H. Boye V. De Lanev
Cal	oles, Automatic	clutch ar	id releasing
Cal	iecnanism for culating-machine		A. J. Dunton J. Graber
Ca	neras, Flash-ligh	t attachme	nt for photo-
Ca	and cooker, Co	mbined	F. P. White
Ca: Ca:	idy-making appa: iopy. Ventilating	ratnsR. V	V. H. Crabb I N Moody
Car	and truck, Rail	wayE.	W. Summers
Car	safety-guard,	W. R. Railway	McKeen, Jr.
Ca	J.	and J. B.	Nelson et al
Car	-nnloader		r. Lightbody
Car	-wneer lathe s and electric-ra		G. Draeseke ages. Device
f Car	or braking tram.	factor gre	. Degoumois
f	eight	rasten gra	C. R. Frye
Ca	bon brushes, Pig	tail connec	tion for W. Shaw
Car	ds. Playing		A. Hammett
Car	rying-register t. Collapsible		. C. Lauber I. Weber, Jr.
Cas	ing and tubing	hookP.	J. Townsell
Cel	lulose ester and	treating sa	me
Ch			.H. S. Mork
Ch:	ir auxiliary sea	t <u>.</u>	G. W. Riebe
Ch:	uk-holder eck. Manifolding	H. C. salesman's	Brunst et al
Ch	olr Solos		E. Z. Lewis
Ch.	ll	· · · · · · · · · · · · · · ·	.J. B. Baird
Chi Chi	mney-holder mney Non-brook	able reticul	L. Sparks
C1.	·······································	able reticul	W. P. Pinel
Ch:	ick-removing dev iruI	riceA. V 4. E. and 1	W. Schramm L. E. Marsh
Chr	ite, Feed	J. J	. W. Kenan
Cig	ar-banding mach	ineO. I	r. J. Cuda Hammerstein
Cig Cli	ar screen and ab oper. Fruit and	sorber flower	F. Acker
Clo	thes-drier	T. J.	Yates et al
Clu	tch for hoists,	Back-motio	C. Poorman
Cli	tch mechanism		I. W. Israel
Cor	t and hat hook,	WireA	. G. Brewer
Cos Cos	ting apparatus ting or facing m	oldsG.	H. J. Potter H. Brabrook
Coc	k, Ball	A	. A. Carson
Col	ar, Automatic si	oring take-	up
Cor	trolling mechani	C. H.	McLaughlin
Cor	verter	J. W. M	urphy et al
Con	verter vever-cleat		D. Seeberger W. Jones
Con	veyers, Bucket	attachment	for
Coc	king apparatns	• • • • • • • • • • • • •	L. R. Davis
Cor	ton chopper and	cultivator.	.S. Wheeler Combined
Cot	on picker Many		. C. Carter
001	······································	l	V. Bowditch
- Cra - Cru	o-float rible-furnace	N	I. A. Evans
Cul	ivator	J. ,	C. Maxwell
Qul	ivator, Rotary	t	S. Brown
- Cnr - Cur	ycomb	E. F	F. Goble
Cur	ain-holding devi-	ceC.	L. Hopkins
~	······································	F.	L. Lathrop
Cut Cut	er-head ing-tool and gag	e. Combine	. Sondegard
Dan			J. S. Duffy
Disl	oranive structure i-cleaner		Junningham Partridge
Disl Dist	-washing machin	ieA. R .	Beal et al
Doo	Automatic	• • • • • • • • • • • • • • • • • • • •	P. S. Pians
- 1200 - 1200	r-catch r-check		. D. Ferris C. Schenck
Doo	r-closing device,	Automatic	75-01
\mathbb{D}_{00}	c-controlling devi	ce, Sliding	E. McClure
D00	. Disappearing.	E	E. F. Smith
Doo	Disappearing.	н.	W. McAfee
Doo	. Grain	D. 1	W. Millsans
\mathbf{D} 00	hanger and tra	ick, Combi	ned
Doo	hanger, Swingi	ngb. J	. Cieveiand
Don	on-picker, Manu befloat before furnace ivator, Hand ivator, Rotary ycomb ain ain-holding devi ain-rods, &c., C er-head ing-tool and gag brative structure cleaner washing machir alay rack, Chair Automatic catch colosing device, controlling devi Disappearing Disappearing Grain handle, Sliding hanger and tre hanger, Swingi	.P. M. Hot	chkin et al N. Kennev
Dra	ting and engrav	ing machin	Nunamat-
Dra	ting appliance	F. M. 1	Printz et al
Dra Dril	ver-guide	S. I	L. Redwine R. Weston
Dril	handle, Pneums socket, Twist.	atic	Levedahl
Driv	socket, Twisting-gear mechan	ism	G. Brown
Due	annoston	A. W. W	igglesworth J. Hickey
17(1.5	-arrester		IIICHC,

Fleetrie-conductor brush holder
Electrical apparatus, Cable-controller for R. J. F. S. Baro Electrical apparatus, Swiveling attachmen device for J. H. Morle Electrical-distribution system. Electrical-distribution system. Electrical-distribution system. J. B. Ent Electrical-distribution system. J. B. Ent Electrical-distribution system. L. B. Ent Electrical fixtures. Electrical fixtures. Electrical fixtures. Electrical indicator. Electrical indicator. Elevated carrier. Elevated carrier. Elevated carrier. Engine controlling-device, Pressnre-fluid. Engine reversing inechanism, Steam. Engines, Magneto-machine for use in connection with the ignition systems of integral applications.
Electrical apparatus, Swiveling attachmen device for J. H. Morle
Electrical-distribution system. A. S. Hubbar Electrical-distribution system. J. B. Ent Flectrical-distribution system. Cheed
Electrical fixture. R. M. Palme Electrical fixture. F. E. Seele Electrical indicator E. E. Crai
Elevated carrierL. A. Marti Elevator safety-gripC. K. Roger Engine controlling-device, Pressnre-fluid
Engine reversing mechanism, Steam
Engines, Magneto-machine for use in connection with the ignition systems of interpolar conversions.
Engines, Spraying device for internal-combustion
Evaporation-boiler with inclined tubes C. Prach
Envelop-making machine. P. H. Farrel Evaporation-boiler with inclined tubes C. Prach C. Prach Exercising apparatus. J. P. Store Explosion-engine. C. F. Jenkin Explosiou-motor. C. F. Jenkin Fat-like substance from the bodics of bacteria, Preparation of a G. Deyck Feed-cutters, Self-feeder for. H. J. Muelle Feed-water beater and smoke-consumer.
teria, Preparation of a
Feed-water beater and smoke-consumer.
Feed-water beater and smoke-consumer. G. C. Mille Feeding device
Fertilizer and making the sameS. B. Newberr Files. System ofT. Wallo
Filing-cabinet, MetalL. Seng Filtering apparatus for parifying gasolen
and other liquid fuelsZ. H. Stamet Filters, Manufacture ofF. Seh
Fire-resisting shutter L. G. Wilson et al.
Fire-screenJ. B. l'affor FirearmC. G. O. Grevilliu
Fisb-trap
Flanging-press
Flattening-ovenR. L. Frink et a Floor-dressing machineG. F. Ha
Floor surfacing, scrubbing and polishin
Flooring, Wood. J. J. C. Hasbrouc Flying-machine. J. E. Harriman, Jr
mechanism in
Folding-machine2 patsW. J. Beatti Foot-restB. T. Neubecke
Frame-hangerH. H. and H. Shepar Frame-arrester and smoke-purifier
Furnace-grate, Rocking-har. E. T. McHug
Floor-dressing machine. H. T. Henserman Floor surfacing, scrubbing and polishin machine, Electric rotary. W. H. Strang Flooring, Wood. J. J. C. Hasbrouc Flying-machines. J. E. Harriman, J. Flying-machines. Automatic balancin mechanism in. S. S. Morriso Folding-machine. G. W. Smit Folding-machine. G. W. Smit Folding-machine. 2 pats. W. J. Beatti Foot-rest. B. T. Neubecke Form, Dress. C. L. Horto Frame-hanger. H. H. and H. Shepar Fume-arrester and smoke-purifier. W. F. Parson Furnace-grate, Rocking-bar. E. T. McHug Furnaces, Gas and air valve for open hearth. J. L. Butle Fuse for explosive projectiles. H. Wilson et a Fuse-supporting connection. E. L. Graue Game apparatus. G. Johnson-Jervi Game apparatus. G. Johnson-Jervi Game apparatus. G. N. By Game device, Educational. M. E. Church Garment-hanger. W. F. Cutle Garment-support, Movable. A. Vandervele Gas apparatus, Continuous-make. E. E. Wickershan Gas-burner. G. Hof Gas-burner. G. Hof Gas-engine. G. P. Lav Gas-engine. G. P. Lav Gas-gas-engine. G. P. Lav Gas-gas-engine. A. Harring Gas-generator. A. Harring Gas-holder guide-frame. H. J. Stoffel.
Fuse-supporting connectionE. L. Graue
Game apparatusG. Johnson-Jervi Game apparatusG. N. By
Garment-hanger
Gas apparatus, Continuous-make
Gas-burner
Gas-engineG. P. Lav Gas flasb-lightJ. Spring
Gas-producer feeding mechanism
Gear, Gapped. 5 pats. W. T. Sears
Gear, Transmission2 patsF. B. Aller Gearing, Change-speed and reversing
Gas flasb-light. J. Spring Gas-generator. A. Harri Gas-bolder guide-frame. H. J. Stoffel: Gas-producer feeding mechanism. V. E. Edwards et a Gear, Gapped. 5 pats. W. T. Sears Gear, Transmission. 2 pats. F. B. Aller Gearing, Change-speed and reversing. J. D. Abbott Glass-annealing leer. G. C. De Bay Glass-glowing-apparatus burner. P. Bornkesse Glass cylinders, Regulation of air-supply In drawing. R. L. Frink
Glass cylinders, Regulation of air-supply in
Glass, Drawing
Glass-drawing baitR. L. and F. J. Frink Glass-furnace Electric 2 pars
Glass-making apparatus, Polisbed
Glass, Making polished. 2 pats
Glass. Metbod of and apparatus for draw-
Glass tiling. Apparatus for making
L. R. Blackmore Glove, Slapping H. H. Pease
Golf-ballG. C. Worthington Grading-machineS. C. Hanna
Grate-basket. J. P. Watson Grate Chain J. C. Coogan
Class cylinders, Regulation of air-supply in drawing
Ground-clamp
Hammer, SteamW. J. Hagman Hammeck, Adjustable couchI. E. Palmer
Hammocks, Head and shoulder rest or sup- port for couch and otherI. E. Palmer Hammocks, &c. Head and shoulder rest
Hammocks, &c., Head and shoulder rest for couch. I. E. Palmer Hanger. F. L. R. Francisco Hat-fastener. C. A. and R. Conroe Hat-fastener. W. S. Lewis
Hat-fastenerC. A. and R. Conroe Hat-fastenerW. S. Lewis
(Continued in February Number.)

An Irresistible Bargain

\$1.75 Value for Only \$1.15

ALL FOR ONLY \$1.15

One Year's Subscription for McCall's Magazine, Any 15-Cent McCall Pattern you may select, One Year's Subscription for the Inventive Age

McCall's Magazine

Is a large, artistic, bandsomely illustrated hundred-page monthly magazine. It contains sixty new Fashion Designs in each issue. Every we man needs it for its up-to-date fashions, entertaining stories and complete information on all home and personal topics. Over one million subscribers. Acknowledged the best Home and Fashion Magazine. Regular price, 5 cents a copy. Worth double.



McCall Patterns

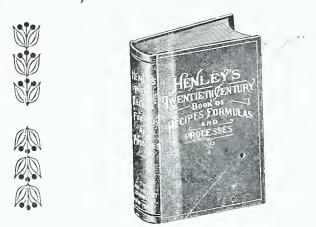
So simple you cannot misunderstand them. Absolutely accurate. In style, irreproachable. You may select, free, any McCall Pattern you desire from the first number of the magazine which reaches you. Regular price, 15 cents.

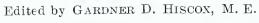
The Inventive Age.

A journal of manufacturing industry and scientific progress. The indispensable paper for patentees. Contains matter and information not found elsewhere. Regular price, \$1.00 per year.

DON'T MISS THIS EXTRAORDINARY OFFER. dress: THE INVENTIVE AGE Publishing Co., Washington, D. C.

HENLEY'S TWENTIETH CENTURY BOOK OF RECIPES, FORMULAS & PROCESSES





Price, \$3.00 Cloth Binding

\$4.00 Half Morocco Binding

800 large Octavo (6 x 9½) Pages.

Contains over 10,000 Selected Scientific, Chemical, Fechnological, and Practical Recipes and Processes, Including Hundreds of so-called Trade Secrets, for every business.

This is THE BOOK everyone should have at his command who seeks PRACTICAL, ACCURATE KNOWLEDGE and GUIDANCE in his every day work, as no book has ever been published which so fully meets the multifarious requirements of the factory, the workshop, the laboratory, and the household. In preparing the work for so exacting and numerous a class of readers the Editor has exerted every effort to present only information which is practical, accurate and modern.

Address---

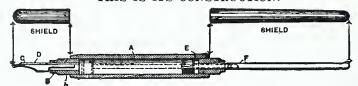
INVENTIVE AGE PUB'L. COMPANY WASHINGTON, D. C.

The "POST"

SELF-FILLING AND SELF-CLEANING

FOUNTAIN PEN.

THIS IS ITS CONSTRUCTION.



No Filler. No Soiled Fingers. No Lost Time. Simple and Perfect.

IT IS AWAY AHEAD OF ANY OTHER PEN MANUFACTURED BECAUSE OF ITS SELF-FILLING AND SELF-CLEANING FEATURES, BEING THE ONLY ONE MANUFACTURED HAVING THESE CONVENIENCES.

Price \$2.00.



Including one year's subscription to "The Inventive Age."

Address

INVENTIVE AGE PUB'L. COMPANY WASHINGTON, D. C.

SEND FOR OUR FREE CATALOGUE OF BOOKS FOR INVENTORS AND MECHANICS.

Address: THE INVENTIVE AGE PUBL'G CO., 918 F St., Washington, D. C.



Vol. XXIII. No. 2. }

Washington, D. C.—February 1, 1911.

SINGLE COPIES 10 CENTA.

THE PRODUCTION OF LIQUEFIED GAS.

By Frank C. Perkins.

Owing to the demand which has arisen in England for liquid air and liquid oxygen, special plants have been installed at London, Birmingham, Manchester and New Castle-on Tyne, for the intensive liquification of gases. From these stations the railway companies carry the product at parcel rates on passenger trains at owner's risk. Liquid air is sold in quantities of not less than one quart at a time, delivered at the works of the British Oxygen Company, Ltd., at \$3.75 for the first quart and \$2.50 for every additional quart supplied at the same time. Liquid oxygen is supplied at any of these stations at an increase of \$1.28 on the above prices, and the liquid is delivered in glass vacuum vessels, loaned free of charge for a period of one week. The vacuum vessels are packed in specially constructed wooden boxes, every effort being made to guard against breakage, and very little trouble is found in safely transporting the liquid air and liquid oxygen.

The accompanying illustrations show the construction of the air and hydrogen liquefiers and the general arrangement of the air compressor piping to purifiers and liquefiers. The apparatus depends upon a method by which a moderate amount of refrigeration, produced by the expansion of gas, may be intensified till it reaches the point at which the gas becomes liquid under atmospheric pressure. The method consists in directing all the expanding gas, immediately after its expansion, over the coils which contain the compressed gas that is on its way to the expansion point. The cold developed by expansion is thus communicated to the on-coming compressed gas. In the same way it communicates its own intensified cold to the succeeding portion of compressed gas, which in its turn is made colder, both before and after expansion, than anythat has gone before. This intensification of cooling goes on until

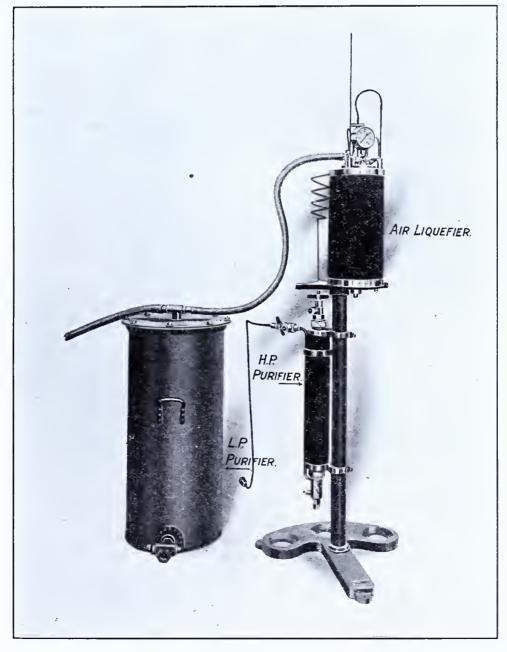


FIG. 1.—AIR LIQUEFIER AND HIGH AND LOW PRESSURE PURIFIERS.

the expansion temperature is far lower than it was at starting; and the effect is so powerful that even the small amount of cooling due to the free expansion of gas through a throttlevalve may be made to liquefy air without using other refrigerants.

It is held that the efficiency of the

method illustrated depends upon the arrangement and construction of the coils and chambers forming the interchanger, in which the expanded gas takes up heat from the compressed gas. To make this action as perfect as possible, the conditions required are: To have a large surface exposed

between the compressed and expanded gases; to have little thickness of material between them, and that little of high conductivity; to have both compressed and expanded gas in small masses in close contact with the conducting material: to have the total volume of the interchanger small, so as to expose little surface for the entrance of external heat; and to have the total mass of coils and interchanger which have to be cooled down with the gas, small and of little specific heat. These are all thermal advantages, and the arrangement of parts in the interchanger of the present apparatus is the most efficient hitherto designed for gases.

In this equipment, (see Fig. 1.) the high-pressure purifier is attached to a pillar of the stand, and the low pressure purifier stands on the floor. The apparatus is capable of working continuously with a compressor able to deliver air at a pressure of 100 atmospheres or over. It begins to liquefy air in from 6 to 10 minutes after its admission, when the compressor is working at from 150 to 200 atmospheres pressure, and makes about $1\frac{1}{2}$ quarts of liquid per hour. It requires no ice and salt, carbonic acid, or other auxiliary refrigerant, and it produces a perfectly clear liquid which requires no filtering.

The apparatus requires little attention, as the operator has only one gauge to watch and one valve to control. The air liquefier is shown in detail in Fig. 2, while Fig. 3 is a diagramatic arrangement of the complete apparatus. Before commencing to work the apparatus, tight connections are made from the compressor high pressure outlet to the inlet of the high pressure purifier, and from the outlet of the latter to the inlet of the liquefier. The outlet of the liquefier F is connected by a ruhber tube with the inlet of the low pressure purifier. This arrangement makes the charge of the high pressure purifier last a long time

without renewal, and the low pressure purifier is made large enough to last equally long without recharging.

It may be stated that the air is drawn into the compressor through the large purifier, which contains slaked lime, by which carbonic acid is absorbed. From the compressor the air is forced at a pressure of from 150 to 200 atmospheres, first through a separating vessel in which most of the water used as a lubricant is separated, and afterwards through the pressure purifier containing caustic potash, in which all remaining traces of moisture and carbonic acid are absorbed.

The compressed air thus freed of moisture and carbonic acid, passes into the regenerator coils and travels down the same and is allowed to escape through a valve which is regulated by a hollow spindle, to which a hand wheel is attached on the top of the apparatus.

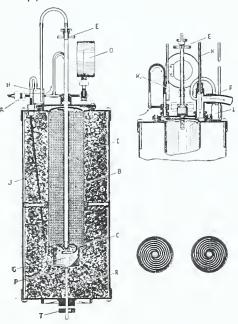


Fig. 2.—Air Liquefier.

The compressor then begins to work with all the valves of connecting pipes and liquefier freely open, including the expansion valve and the discharge valve. The air is allowed to blow through for a few minutes, in order to remove all traces of moisture from the coils, when the discharge valve and the expansion valve are closed until the compressor raises the pressure to something between 100 and 200 atmospheres. The expansion valve is then opened till a moderate stream of from five to eight cubic feet per minute passes from the outlet of the liquefier. The pressure at the outlet is indicated by the glycerine gauge, and this pressure should be between six to nine inches of glycerine.

It is maintained that glycerine is more suitable than water for this gauge because its viscosity makes it less liable to jump, and its weight makes a shorter column suffice. A little observation will show the rate, as indicated by the glycerine gauge, at which the air should be allowed to expand for the most profitable production of liquid.

It may be stated that the air released through the valve immediately expands down to atmospheric pressure or thereabouts, and travels back over the regenerator coils, finally escaping either into the atmosphere or back into the compressor to be recompressed. It will be seen that the expanded air acts with an extensive

cooling effect on the compressed air, which is passing down through the coil in the manner already described, and the efficiency of the apparatus is such that in from six to ten minutes, part of the air begins to liquefy and collect in the receiver.

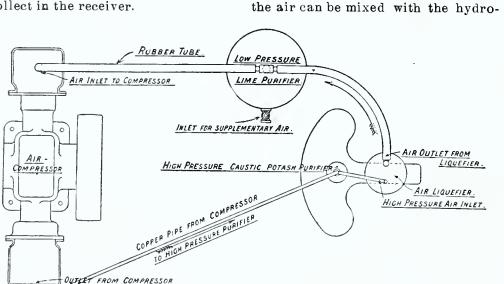


FIG. 3.—DIAGRAMATIC VIEW OF COMPLETE APPARATUS.

It may be stated that when it is gen. If a trace of air should be desired to withdraw liquid from the receiver, the valve at the bottom of the receiver is opened by turning the hand wheel. The liquid then enters the hollow spindle and flows down into a portable vacuum vessel in which it is collected. A thermometer is provided to register the temperature of the air leaving the liquefier, and there is a socket in which a thermometer can be placed to register the temperature of the compressed air as it enters the regenerator coils. There is also provided a pressure gauge to register the pressure of the compressed air as it enters the coils.

WATER SEPERATOR

The hydrogen liquefying apparatus is shown in drawing Fig. 4, and it is of interest to note that hydrogen, when compressed at normal temperatures and allowed to expand in an apparatus like the air liquefier, does not become cooled, but on the contrary, slightly heated. When, however, its temperature is reduced to 80 degrees C., or lower, before it enters the regenerator coils, it becomes further cooled on free expansion, so that the principle of self-intensive cooling employed in the air liquefier can then be applied to the liquefication of the gas. It is therefore necessary in order to liquefy hydrogen to use a supplementary. The hydrogen liquefier noted was designed by Prof. Morris W. Travers.

The pre-cooling of the hydrogen mentioned above is obtained by the evaporation of liquid air, and as considerable quantity of liquid air is required, a complete installation for liquefying hydrogen includes an air liquefier. Liquid air can be first produced in the hydrogen liquefier, if desired, but this practice is not recommended. The hydrogen liquefier is not suitable or efficient for this purpose, and as it is necessary on the grounds of safety and efficiency to remove every trace of air from the purifying vessels, coils, pipes and passages before commencing the liquefaction of hydrogen, the use of the same apparatus for both purposes involves exceptional care and precaution in working.

present in the hydrogen, the regenerator coils are liable to become blocked by the air solidifying under the low temperature involved in the liquefaction of hydrogen.

The same compressor, however,

may be employed with both the air

and hydrogen liquefiers. The ordi-

nary air compressor has to be slight-

ly modified in construction, so that,

when used with either gas, no trace of

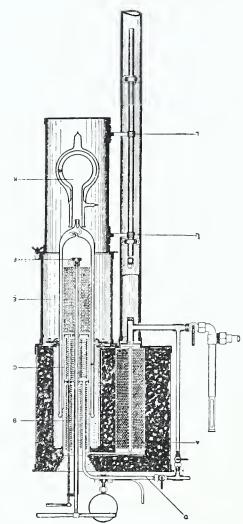


FIG. 4.—HYDROGEN LIQUEFIER.

In the drawing, Fig. 4, the general construction of the hydrogen liquefier may be seen. Hydrogen is drawn from a suitable gas holder and compressed to a pressure of from 150 to 200 atmospheres. It is passed through a purifier containing caustic potash in order to remove any moisture it may have absorbed in the compressor. It then enters the low end of the coils in the chamber A, where it is cooled by the cold hydrogen returning to the gas holder. From here it passes into the top of the coils in the chamber B. This chamber is filled

with liquid air, so that the time the compressed hydrogen has reached the lower end of the coils in the chamber B, it is cooled down to the temperature of liquid air via.:-190 degrees C. The cold compressed gas then passes into the coils contained in the chamber C, into which liquid air is allowed to drop through a small valve regulated by a spindle extending to the top of the apparatus. A partial vacuum is maintained in the chamber C by means of a small exhaust pump, connected to the pipe D so that the liquid air passing into the chamber is evaporated in vacuo, thus reducing the temperature below 200 degrees C. The compressed hydrogen, still further reduced in temperature, then enters the regenerator coil E. This coil is contained in a silver glass vacuum vessel with an opening at the lower end. The bottom of the regenerator coil is attached to a valve regulated by a spindle extending to the top of the apparatus, and through this valve the compressed hydrogen finally escapes and expands to normal atmospheric pressure, or more strictly speaking to the slight pressure of the gas holder to which the bulk of the hydrogen returns.

On its way back to the holder, however, it is caused to pass over the regenerator coil E with self-intensive cooling effect. It then passes around the outside of the chambers C and B into the chamber A, where it acts with further cooling effect on the incoming hydrogen in the manner already explained. Thus the hydrogen returning to the holder is only a few degrees colder than when it enters the coils. The remaining hydrogen has been liquefied at the point of expansion and collects in the vacuum vessel, K

It is maintained that the efficiency of the liquefier is such that liquid hydrogen begins to collect in the vessel K a few minutes after the apparatus is started. As liquid hydrogen cannot be drawn off through a stop cock without great loss, special arrangements have to be made for collecting it. The use of a stop-cock is obviated by collecting the liquid in the receiver J as soon as it is formed in the bottom of the vacuum vessel surrounding regenerator coil E. The receiver K is contained in a separate metal box below the apparatus. box has glass windows at the frontand back, so that the process of liquefaction can be watched. It is held in place by hinged clamping bolts, which compress a rubber ring between two flanges so as to form a gas-tight joint, and it is so arranged that when these bolts are released it can be lowered on a slide L and turned independently, so that the receiver K can be readily changed and the box returned to its original position without stopping or in any way disarranging the appar-

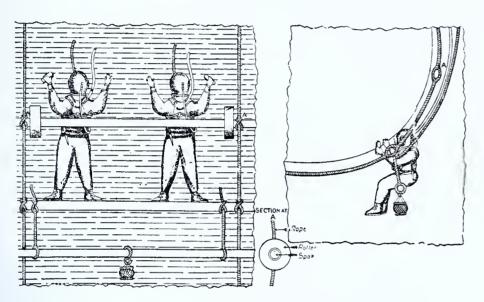
This liquefier, it is claimed, is capable of producing about two quarts of liquid hydrogen per hour, and about five quarts of liquid air are required in the production of one quart of liquid hydrogen. As all unliquefied hydrogen is returned to the gas holder very little is lost, and about 100 feet of hydrogen is sufficient for an experiment. A gas holder of this capacity is therefore required, together with a small hydrogen generating plant by which the requisite quantity of gas can be prepared from pure zinc and pure dilute sulphuric acid.

To keep themselves posted in the progress of the arts in which they are interested, inventors and manufacturers should subscribe for the IN-VENTIVE AGE, which publishes a list of all patents issued each month. The low subscription price and the character of the publication entitle it to the support of all the inventors of the

CLEANING SHIPS' BOTTOMS.

One of the sources of expense to ship owners is the accumulation of barnacles on the bottoms of vessels. Boats that ply in tropical waters, especially, are subject to this annoying growth, which seriously impedes their speed, and in time, injures them. It is necessary, when the growth is sufficiently advanced, to place the ships in dry dock, and have them scraped. This process often consumes considerable time, and the cost for large ships is heavy.

kind of scaffolding, which may be raised and lowered at will. This platform may be readily constructed of the roller spars and ropes available on any ship, and the men in their divers' suits may stand on it and work at ease. To reach the platform, the diver seats himself in a rope chair, and is lowered by a simple pulley device under the water, care being taken to keep his air tube and speaking tube out of the way of the ropes which operate the apparatus. With



DIVERS' APPARATUS USED IN CLEANING SHIPS' BOTTOMS.

The barnacles which cause all this trouble are interesting little animals. Although they grow on rocks and wood after the order of mollusks, they are really degenerate crustaceans. In other words, they are more like crabs or lobsters than like oysters. The animal is protected by a shell, which is composed of several pieces or valves with a multivalve, conical, movable lid, having an opening through which hairy appendages are thrust. These appendages are constantly in movement, thus creating a current which sets in toward the mouth. In its early youth, the barnacle travels about freely in the water, but at a certain period it selects an object of attachment, and affixing itself thereto by its head, it grows there permanently. As noted, the bottoms of ships are popular resorts for these unwelcome visitors, but other pieces of wood are similarly favored, as well as rocks. Large fishes, such as whales, have been found with barnacles growing on them. They eat animals still smaller than themselves, their long hairy legs kicking the food into their mouths. These same flexible members also have a function in respiration.

whose bottoms are foul with this growth to go into dry dock, an effort will be seen, the workers stand on a which makes the annual consumption

the aid of these appliances, considerable headway can be made against the growth in the course of a few days.

Lost Fortunes.

Toward the end of the year somebody of a mathematical turn of mind always begins to figure out how much we might have saved had we not let so much slip through our fingers as waste, during the year. This time it is the corn cob. These discarded articles, it has been found, can be converted into wood block in many forms, such as railroad ties, furniture, etc. It is estimated that this year's crop of approximately three billion bushels of corn would produce 1,650,-000,000 bushels of cobs, on the basis of 55 per cent cob, and these pressed into boards would yield 19,300,000 feet of lumber. Made into railroad ties, they would provide enough for nearly 14,000 miles of road.

John T. Schaffer, who is responsible for the above statistics, was the first man to put wire into glass for practical commercial purposes, thereby saving many bills for broken glass. He also applied the pneumatic cushion to car bumpers for the reduction of shock in rebound, thereby causing a saving in nerves. His hobby is in the conservation of the wasted assests of When it is impossible for vessels the industrial world. Lubricating boxes on railroad car wheels, he says, are one great source of wasted wealth. is made to clean them by the aid of There are over ten million car wheels divers. The accompanying illus- in the passenger and freight cars of tration shows the apparatus that is this country. They require, on an commonly used for this purpose. As average 30 gallons of oil per year,

of oil for wheels alone, over three ly occurs that if a majority of the pathundred million gallons. To soak up this vast quantity of lubricator some 51,000,000 pounds of waste are used, or an average of five pounds to each wheel. A demonstration of saving oil from waste was made by Mr. Schaffer, and from sixty pounds of the oily waste seven gallons and one quart of oil was squeezed. If, on the average, one hundred pounds of waste produces only 8 gallons of oil, the amount possible to save from the oily waste used by the railroads of the United States in one year would reach a total of over four million gallons, and at an average price of ony 33-3 cents per gallon, the cash value would be \$1,366,595.

Among the other materials most grossly wasted, the same authority mentions peat, corn stalks, sugar cane stalks, and leather scraps.

Patent Lawyers Defend Present U. S. System.

Responding to statements recently made before the Congressional Committee on Patents, in which the character of our present patent system was attacked, the Washington Patent Law Association has issued a statement in which it takes special cognizance of the remark credited to Commissioner Moore that sixty per cent of the patents regularly issued by the Patent Office at the present time are "almost worthless, in whole or in part.

Mr. Moore is also credited with comparing the present system of the United States with the patent systems of other countries, especially those of Great Britain and Germany, to the discredit of our system. Of this the association says:

"These statements are of such a nature that they cast a cloud upon all patent property, and are a serious reflection upon the personnel of the Patent Office. The statements throughout the article are of such a nature as to call for an answer from the patent lawyers of the country, as the members of the examining corps of the Patent Office are practically prohibited from making a reply.

"At the outset the question natural-

ents issued weekly by the Patent Office are valueless in whole or in part, whose fault is it? It cannot be said to be the fault of the inventors or the attorneys who represent them before the Patent Office. The Commissioner of Patents has absolute authority to withhold any patent that does not comply with the requirements of the patent laws. Why then does he continue to issue worthless patents?

"The Commissioner's statement, however, is incapable of proof and neither facts nor figures are given as a basis for it. The vast majority of patents are never litigated. Only a small fraction of one per cent of them ever get into court, and of the patents litigated not over one-third are held to be void. It was stated at a recent hearing before the House Committee on Patents that of the patents litigated in the past four years (427), as reported in the Federal Reporter, only twenty-nine per cent were held to be invalid, in whole or in part, the number litigated being only a fraction of one per cent of the patents issued during that time.

"Furthermore, every patent lawyer in active practice knows that a very large number of patents are acquiesced in every year without having their validity questioned, and is called upon to examine patents which his clients would like to have declared invalid, if possible, and upon such examination has been obliged to report that in his opinion the claims are valid.

"As to the comparison of the patent system of the United States with those of other countries, we venture the opinion that our system is vastly superior to any and every other patent system in the world. This is generally acknowledged even in foreign countries, and, in fact, the present patent laws of Great Britain and Germany were modeled after the patent laws of the United States, and this is true to some extent of several other countries.

"It may be admitted, perhaps, that there are some slight defects in the patent system of the United States, for perfection is difficult of attainment. but these defects are very minor ones.

PATENTS

Send Your Business Direct to Washington Saves Time and Insures Better Service.

Trade Marks. Copyrights and Designs.

My office is close to the U.S. Patent Office. Personal attention given-OVER THIRTY YEARS PRACTICE. Book "How to Obtain Patents," etc., sent free. Patents procured through E. G. Siggers receive special notice, without charge, in the—

INVENTIVE AGE

Illustrated Monthly-Twenty-third Year. Terms, \$1.00 a Year.

918 F STREET, N. W., E. G. SIGGERS, WASHINGTON, D. C.

CLEVER NEW PATENTS.

A SPRING TOOTH CULTIVATOR—INTERNAL COMBUSTION ENGINE.

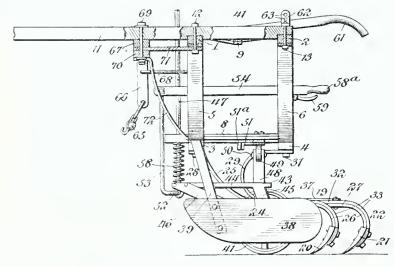
A Spring Tooth Cultivator.

This cultivator is designed particularly for use on rocky and stumpy ground. It will not be injured should it strike a stump or rock; it may be easily shifted for dodging corn or a stump; and it may be moved upwardly to prevent it from slipping downwardly in cultivating a hill side.

The two illustrations represent different views of the invention. They represent only one side of the machine. The figure to the right shows the cultivating devices supported above the ground, while the figure to the left shows the teeth ready for engagement with the ground.

THE FRAME.

The frame of the cultivator, as will be easily seen from the accompanying illustrations, is composed largely of straight wooden bars, and the metallic parts are malleable in order that the cultivator, should any of its parts become broken may be readily repaired by a blacksmith and thereby avoid the inconvenience and expense of shipping the cultivator, or any portion thereof, back to the factory for repairs. As the metallic portions of the main frame are constructed of malleable metal, they may be varied in size to provide a frame of any desired strength.



THE SPRING CULTIVATING DEVICES.

The cultivator is provided at each side with a plurality of spring cultivating devices, adapted to yield to prevent injury to them should they strike a stump or rock, and arranged in pairs at each side of the fender of the cultivator. Three or more may be employed if desired. Each cultivating device 22 consists of a main longitudinal spring and a rear bracing spring. The main longitudinal spring has its front portion curved upwardly and its rear portion is curved downwardly, the intermediate connecting portion being approximately straight. The front end of the longitudinal spring is bolted to the lower face of the front bottom transverse bar of the frame. The rear spring is provided with a substantially semi-circular front portion extending upwardly from the main longitudinal spring at a point near the center thereof and bolted at its upper end to the lower face of the rear bottom transverse bar. The rear spring is also provided with a straight intermediate portion and a downwardly curved rear portion, which respectively fit the straight rear portion and the downwardly curved portion of the main longitudinal spring so as to reenforce the same and to provide a resilient cultivating device of great strength and durability. The cultivating devices may be equipped with shovels or any other preferred form of soil-engaging device, and the blades or shovels may be arranged to throw the soil in either direction.

THE FENDERS.

The cultivator is equipped at opposite sides of the center with fender blades 38, (only one is shown in the illustrations) arranged in spaced relation and adapted to prevent the cultivator from throwing the soil upon and injuring young plants. The fenders are provided at their front ends with arms 39, which are adjustably bolted to the front bottom transverse bar of the frame to permit the fender blades to be arranged the desired distance

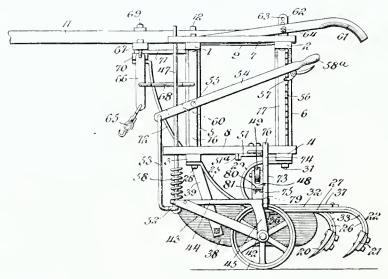
THE CASTER WHEELS.

The main frame of the cultivator is supported at opposite sides by caster wheels 41, (the illustrations show but one of the wheels) mounted on suitable axles in approximately triangular frames 43. A vertically adjustable rod 47, which is mounted in openings of the top and bottom end bars of the main frame of the cultivator, forms a pivot for the triangular frame of the caster wheels. Anti-friction wheels 49, which engage curved tracks 51 of the main frame, are mounted in the triangular frames. The main frame rests upon the anti-friction wheels and is adapted to be shifted laterally in either direction for dodging corn or stumps, and also for moving it upwardly while cultivating on a hill side, whereby the cultivator is prevented from slipping down the hill.

The main frame is controlled in its adjustment by rearwardly extending handles 61, adjustably mounted and adapted to be raised or lowered to arrange them to suit either a boy or a man.

THE ADJUSTING DEVICE.

The lower end of the rod 47 is provided with an eye 52 to receive the lower end of a rod 53, which connects the front of the triangular frame with an adjusting lever 54. This lever extends longitudinally of the cultivator. The main frame is equipped with a ratchet 56, which is engaged by a pawl 57, whereby the lever is secured in its adjustment.



A coiled spring 58 is arranged on the lower portion of the rod 47 and is interposed between the front of the triangular frame and the bottom bar of the main frame to facilitate the adjustment of the cultivator. By catching hold of the handles 58a and raising and lowering the rear end of the adjusting lever, the main frame is tilted backwardly or forwardly on the anti-friction devices of the caster wheel frames. This will throw the shovels or other soil-engaging devices into and out of the ground, and the adjustment may be effected while the cultivator is in operation without stopping and re-setting the cultivating devices.

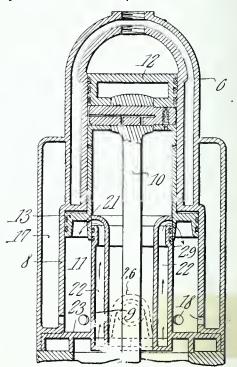
When it is desired to transfer the cultivator from one field or place to another, the cultivating devices are elevated above the ground and the caster wheel frames are rigidly connected with the main frame and held against independent movement.

THE DRAFT EQUALIZER.

The draft animals are hitched to singletrees 65, secured at their lower ends to approximately vertical levers 66, connected at their upper ends to and depending from an equalizing bar 67. The depending levers are also connected with the main frame by links 68. The equalizing bar 67 is pivoted to the lower face of the draft tongue by a bolt, and is supported by a transverse bar 70, connected with the top of the main frame by a short central brace 71, and with the bottom of the main frame by side braces 72. The equalizing device enables the draft animals when drawing the cultivator to move backwardly or forwardly with relation to each other without twisting the cultivator. The entire right title and interest in this patent is owned by John Hagedorn, Grand Ridge, Ill.

Internal Combustion Engine.

The daily increase in the use of the automobile, both for pleasure and in industry, and the growth in the number of motor boats employed on our inland waters, are due primarily to the development of the internal combustion engine. It is this form of locomotive, too, which has made the airship possible, and improvements in these engines are watched with general interest by the trade. An apparatus of this character which has several points of value has been invented by Charles W. Foster, of New Haven, Connecticut. It relates to twocycle engines of that type in which the cylinder and the piston are so con-



structed and arranged that the latter operates as a working piston as well as the piston of a pump for supplying a fresh charge to the engine. The cylinder structure also forms a pump or compression chamber, as will be seen by reference to the vertical section shown in the cut, in which the cylinder has an enlargement at its bottom, into which which extends a cylinder 9, open for the passage of the piston rod 10, and spaced from the wall of the enlargement to form a pump chamber 11. The piston 12 is lengthened to extend into this chamber, and has a head working therein, thus forming the pump piston. The pump chamber communicates with the receiver 17, through ports 18. The inlet of the working cylinder opens from the upper end of the receiver. Ports 21 in the piston 12 open into the chamber 11, and register at their other ends, when the piston moves inward, with passages 22 in the cylinder 9. The base of this cylinder closes the end of the compression chamber, and this base has passages leading to the passages 22. In the receiver 17 is a partition which forms a closed chamber, which communicates with a charge forming device.

In operation, the piston head 13 travels up in the chamber on the rising stroke of the piston, whereupon a charge is drawn into the receiver 1 through a pipe, passing then through the ports into the pump chamber. When the piston moves down, the head compresses the charge, forces it into the working cylinder through the port, which is uncovered at the end of the down stroke of the piston. On the upward stroke, the ports 21 register with the passages 22, and more air and gas enter the pump chamber, being deflected down by the inclination of the ports. By this arrangement, an auxiliary or third port is secured, and the admission of air or gas is mechanically and positively

controlled.

HATEST COURT DECISIONS IN PAT-ENT, COPYRIGHT AND TRADE-MARK CAUSES.

SPIEGEL et al. v. ZUCKERMAN et al.

(Circuit Court, S. D. New York. Jan. 24, 1910. 175 F. R. p. 978.)

1. TRADE-MARKS AND TRADE-NAMES-PRI-ORITY OF USE-BURDEN OF PROOF.

Where two or three makers are using the same word as a mark or brand on the same class of goods at the same time, and one asserts the right to it as a trade-mark, and seeks to enjoin the others from using it, he has the burden of proof to show that he was in fact the first to use it.

2. TRADE-MARKS AND TRADE-NAMES-AS-SIGNMENT-VALIDITY.

A trade-mark cannot be assigned except as an incident to the transfer of the business and good will in connection with which it was acquired.

3. TRADE-MARKS AND TRADE-NAMES-PER-SONS ENTITLED-PRIORITY OF USE.

Complainants held not to have an exclusive right to use the word "Princess" as a trade-mark for shirt-waists on evidence that, at the time their predecessors, who assigned the right to them, began its use, it was and had been for some years used by different manufacturers throughout the country, either by way of a trade-mark or as a brand.

MORGAN ENGINEERING CO. v. ALLI-ANCE MACHINE CO.

(Circuit Court of Appeals, Sixth Circuit, Nov 2, 1909. 176 F. R. p. 100.)

1. PATENTS—CONSTRUCTION—ADVANTAGES NOT CLAIMED.

A patentee is entitled to have his patent considered with reference to an advantage over the prior art necessarily secured by the operation of the device as described, even though such advantage is not specifically claimed.

2. PATENTS - VALIDITY AND INFRINGEMENT -TRAVELING CRANE.

The Shem patent, No. 791,951, for improvements in double trolley traveling cranes, was not anticipated, and discloses patentable invention in view of the marked superiority of the patented structure over those of the prior art, although claims I and 2 are void as too broad. The remaining claims also held infringed.

E. B. ESTES & SONS v. GEORGE FROST COMPANY.

(Circuit Court of Appeals, First Circuit. Feb. 8, 1910. 176 F. R. p. 338.)

TRADE-MARKS AND TRADE-NAMES-UNFAIR COMPETITION—FRAUDULENT IMITATION OF PATENTED ARTICLE.

Complainant, as exclusive licensee, made hose supporters having a rubber button, which was protected by a patent covering the use of rubber as the material, and advertised and sold the same under the trade-name of "Velvet Grip." Defendant made wooden buttons for similar use, colored to imitate rubber and used by other manufacturers on hose supporters which were sold to the public as rubber button support-ers, and sometimes as "Velvet Grip" supporters. Held, that such sales constituted unfair competition.

TIME SAVER CO. v. STAMFORD TRUST COMPANY.

(Circuit Court of Appeals, Second Circuit.

Jan. 11, 1910, 176 F. R. p. 358.)

PATENTS-INVENTION-BANK ACCOUNT BOOK. The Rand patent, No. 746,157, for a bank account book, in which the leaves have a vertical crease down the center, upon which the outer half may be folded forward or backward to facilitate the carrying forward of balance to another page, is void for lack of invention, in view of the prior art, as shown in the Wever and Farmeter patent, No. 632,769.

WESTINGHOUSE ELECRIC & MFG. CO. v. ALLIS-CHALMERS. CO.

(Circuit Court of Appeals, Third Circuit. Jan. 20, 1910. 176 F. R. p. 362.)

1. Patents-Construction - Electrical MECHANISMS.

In dealing with patents having relation to electricity, an invisible, intangible agency,

and in itself of different kinds, which in its different phases may affect or be affected by metals or appliances in different ways and with wholly different results, a court must guard against being misled by the mere superficial resemblances of the appliances and machines used in connection with it; for from an electrical standpoint the real signficance of such appliances lies, not in their material, external appearance, but in their working effect, under the influence of diverse electrical factors.

2. PATENTS-VALIDITY AND INFRINGEMENT -System of Electrical Distribution.

The Lamme patent, No. 606,015, for a sys tem of electrical distribution and regulation designed to obviate the variation in speed of a rotary converter with changes in the amount of the inductive load, when converting a direct into an alternating current, is not for a mere aggregation of previously known devices, but discloses invention of decided merit, in view of the fact that the problem of preventing such machines from racing and destroying themselves when such conversion was attempted had been known for several years, at a time when such apparatus was particularly in demand, and that the patentee was the first to devise an efficient means; also held infringed.

3. PATENTS - INFRINGEMENT-PERSONS LI-ABLE-CORPORATION CONTROLLING AN-OTHER.

Where one corporation owns or controls absolutely the entire property of another, including its business and good will, and operates its plant and conducts its business as a department of its own business, it is responsible for the acts of such other company and may be held liable for its infringement of a patent.

DONALDSON v. ROKSAMENT STONE CO. (Circuit Court, S. D. New York. Jan. 21, 1910. 176 F. R. p. 368.)

PATENTS-SUIT FOR INFRINGEMENT-VIOL-ATION OF INJUNCTION.

An officer of a corporation enjoined by final decree from infringing a patent, who was personally responsible for its acts and also for those of a new corporation formed thereafter, held in contempt for violation of the injunction.

AMERICAN SPECIALTY STAMPING CO. v. NEW ENGLAND ENAMELING CO.

(Circuit Court of Appeals, Second Circuit. Feb. 8, 1910. 176 F. R. p. 557.)

1. PATENTS—INFRINGEMENTS—SUFFICIENCY OF EVIDENCE.

Where a defendant, which admittedly made and sold an article which infringed a patent, of which, however, it had no knowledge, made an agreement with the patentee conceding the validity of the patent and agreeing to discontinue the manufacture and sale of the infringing article, the fact that it retained in its circulars cuts apparently representing such article is not alone sufficient to establish subsequent infringe-

2. Patents - Construction of Claims-REFERENCE TO SPECIFICATION.

In construing the claims of a patent, whether or not the phrase "substantially as described" is repeated in each one, the first, and generally the best, source of information is the specification.

3. PATENTS-INFRINGEMENT-COOKING UTENSIL. The Oberman patent, No. 507,281, for a cooking utensil, construed, and the evidence of infringement held sufficient to warrant the granting of a preliminary injunction.

FOREST CITY FOUNDRY & MFG. CO. v. BARNARD.

(Circuit Court of Appeals, Sixth Circuit. Feb. 8, 1910. 176 F. R. p. 561.)

1. PATENTS — ANTICIPATION — UNCLAIMED FEATURE OF PATENTED DEVICE.

A patentee is entitled to a beneficial use of a feature of his device if it actually exists, although he did not specifically claim it, and it may constitute an anticipation of a later

2. PATENTS - ANTICIPATION - FLUID DIS-TRIBUTOR.

The Barnard patent, No. 580,151, for a fluid distributor, held not anticipated, and

AMERICAN STEEL & WIRE CO. OF NEW JERSEY v. DENNING WIRE & FENCE CO.

Division. Jan. 11, 1910. 176 F. R. p. 564.)

1. PATENTS — INFRINGEMENT —M A C H I N E PATENT.

To constitute infringement of a patent for a machine the infringing machine must be substantially identical with that of the patent in the result attained, the means of obtaining that result, and the manner in which its different mechanisms operate and cooperate to produce that result.

2. Patents — Infringements— Machines—In-TERMITTENT AND CONTINUOUS OPERATION.

Machines or devices in which the different parts are arranged and constructed to operate continuously are different in principle from those in which the parts are arranged to operate intermittently and alternately with each other, and one is not an infringement of the other.

3. PATENTS-INFRINGEMENT-WIRE FENCE MA-

The Bates patent, No. 577,639, for a machine for making wire fence, construed, and held not infringed.

4. Words and Phrases-"Cut."

The word "cut" most usually signifies to make an incision with a sharp instrument; to cut or sever by the application of a sharp knife or edge instrument of some kind.

I. E. PALMER CO. v. PATTERSON.

(Circuit Court, E. D. Pennsylvania. Feb. 17, 1910. 176 F. R. p. 573.)

PATENTS-VALIDITY AND INFRINGEMENT-HAMMOCK ATTACHMENT.

The Palmer patent, No. 574,073, for a hammock attachment, comprising a frame adapted to cause the hammock body or portion thereof to assume a different position from that which it would normally assume when suspended, to form a seat or leg rest, or both, was not anticipated, and discloses patentable invention; also held infringed.

WILLIAMS PATENT CRUSHER & PUL-VERIZER CO. v. PENNSYLVANIA CRUSHER CO.

(Circuit Court, E. D. Pennsylvania. Feb. 12, 1910. I76 F. R. p. 576.)

1. Patents-Construction-Consideration of REJECTED CLAIMS.

A patent must be read and construed with reference to the claims rejected and to the prior art, and cannot be so construed as to cover either what was rejected by the Patent Office or disclosed by the prior art.

2. Patents — Infringement — Crusher AND PULVERIZER.

The Williams patent, No. 843,749, for a dumping cage for crushers and pulverizers, claims I and 2, as limited by the prior art and proceedings in the Patent Office, held not infringed.

PHILADELPHIA EXTRACTING CO. v. KEYSTONE EXTRACTING CO. et al.

(Circuit Court, E. D. Pennsylvania. Feb. 14, 1910, 176 F. R. p. 830.)

1. Injunction - Disclosure or Use of TRADE SECRETS.

Where complainant was the owner of an unpatented secret process for extracting alcohol from empty whisky barrels, and for many years had employed reasonable precautions to insure secrecy, its servants necessarily intrusted with knowledge of the process being enjoined not to disclose any of its steps, complainant was entitled to restrain an ex-servant, who had learned the process during his service, from communicating the same to others and using such information to organize a competing business on his own account.

2. Injunction—Laches.

Laches was no defense to a master's right to an injunction to restrain an ex-servant's future use of a secret process disclosed to the servant in the course of his employment by complainant.

PARKER v. STEBLER et al.

(Circuit Court of Appeals, Ninth Circuit. March 7, 1910. 177 F. R. p. 210.)

(Circuit Court, N. D. Iowa, Cedar Rapids 1. Patents — Prior Use — Burden and MEASURE OF PROOF TO ESTABLISH.

> The burden of proof to establish a defense of prior use to invalidate a patent rests on the defendant, and, where oral testimony of witnesses speaking from memory only is relied on, it must be so clear and satisfactory as to convince the court beyond a reason-

2. Patents—Validity and Infringement. HAND-TRUCK.

The Bryan patent, No. 714,140, for a hand-truck particularly designed for moving poxes in a fruit packing house and having a clamping device by which the lower one of a tier of boxes may be grasped and the whole tier lifted and moved without separate handling, was not anticipated and discloses patentable invention of such merit as to entitle it to a fairly liberal construction. Also, held infringed.

WESTERN ELECTRIC CO. et al. v. FOWLER.

(Circuit Court of Appeals, Seventh Circuit. Jan. 4, 1910. 177 F. R. p. 224.)

1. PATENTS - SUIT TO OBTAIN PATENT-MEASURE OF PROOF.

In a suit under Rev. St. § 4915 (U. S. Comp. St. 1901, p. 3392), by an unsuccessful applicant for a patent to establish his right, where in interference proceedings before the Patent Office between complainant and defendant all of the examiners who passed upon the matter, the Commissioner, and the Court of Appeals of the District of Columbia con-curred in adjudging priority of invention to defendant, who was awarded a patent, such judgments can only be overcome by clear and convincing proof, which strongly out-weighs that of the other side in the interference proceedings.

2. PATENTS--SUIT TO OBTAIN PATENT -MEASURE OF PROOF.

Evidence considered and held insufficient to overcome the judgments of the Patent Office and the Court of Appeals for the District of Columbia in interference proceedings, on which the McBerty patent, No. 817,867, for apparatus for telephone switchboards, was granted.

UNDERWOOD TYPEWRITER CO. v. TYPEWRITER INSPECTION CO. SAME v. E. C. STEARNS & CO.

(District Court, S. D New York, March 7, 1910. 177 F. R. p. 230.)

1. Patents—Infringement — Improvers—

"Infringer." An improver on a patented device, al-

though his improvement may be patentable of itself, is an "infringer," if he uses the specific device of the prior patent.

2. PATENTS-VALIDITY AND INFRINGEMENT -Typewriters.

The Wagner patents, No. 559,345 and No. 633,672, for typewriting machines, both relating to mechanism whereby the operator can set the machine so as to write part way only, or wholly, across the page, and on arriving at the stopping point the keys are automatically locked, and the latter also covering a device by which the operator by pressing a button can unlock the keys, if desired, for the purpose of adding one or more letters to the line, were not anticipated, and disclose invention, but are improvement patents merely, and are specific and of narrow scope. In view of such facts and of the limitations of the claims by the language employed, imposed by the Patent Office and acquiesced in to avoid references in the prior art, neither patent is infringed by the mechanism of the Schneelock patent. No. 852,400, which attains the same results but by different means.

GENERAL ELECTRIC CO. v. CHICAGO FUSE WIRE & MFG. CO.

(Circuit Court, S. D. New York. Feb. 14, 1910. 177 F. R. p. 275.)

PATENTS — INFRINGEMENT — ELECTRIC SAFETY FUSE.

The Thalacker patent, No. 502,541, for an electric safety fuse consisting a main safety fuse, and auxiliary safety fuse, and a box or casing completely enveloping the main fuse, but so constructed as to permit the condition of the auxiliary fuse to be seen, is valid and entitled to a reasonably broad construction, and is infringed by a con-struction in which the "condition" of the auxiliary fuse may be seen, although the fuse itself cannot.

MECHANICAL INVENTIONS AND DESIGNS

Patents for which have been procured through the Patent Soliciting Office of E. G. Siggers, Patent Lawyer, Washington, D. C.

Samuel B. Swift, Edgewater, Colo. Envelop.—One object of this invention is to improve the construction of envelop, and to provide a simple, efficient and comparatively innexpensive envelop having means for effectually preventing it from being opened without detection. The envelop comprises a sheet of paper, the central portion of which constitutes the front, opposite end flaps, one of the flaps being provided with a slot or opening and the opposite flap having a reduced tongue, said tongue being arranged to be passed through the said slot and having an enlarged head, and opposite side flaps, one having a slot and the other having a concealed breakable sealing strip secured thereto and arranged to be passed through the said slot and to be secured by the sealing of the envelop.

William Alfred James, Rockford, Illinois. Surface Indicator.—This invention has for its main object to provide a simple, efficient and inexpensive surface indicator, designed for testing the work of lathes, planers, and analogous machines, and capable of use in a tool holder and of accurately measuring the surface of the work to be turned or otherwise operated on. It consists of an indicator in the form of an oblong casing having a hollow longitudinally disposed arm extending from one end of the casing and provided at the other end with an arcuate face having graduations thereon, an indicating hand pivotally mounted in the casing and arranged to co operate with the scale, a contact rod movable through the hollow arm, and suitable mechanism for communicating motion from the contact rod to the indicating hand, said mechanism being arranged within the said casing.

Ambrose Barkley, Pipestone, Minn. Two patents.—The first invention has for its object to provide a relatively large weeder operating on five rows of plants so that it may be easily handled by a team, and it consists of a main frame supported on wheels and carrying the draft tongue and driver's seat, and also carrying a supplemental vertically adjustable frame which is pivoted on the underside of the tongue and at its rear end provided with spring weeding teeth. and also provided with the whifiletree or draft means to which the animals are attached.

The second patent has for its object to provide a simple and comparatively inexpensive cultivator, which is capable of straddling a row of plants to cultivate the soil in the space between the same and the adjacent rows, and adapted to permit the driver to occupy a position directly above the row of plants straddled by the machine, whereby the soil at each side of the straddled row will be in full view of the driver and thereby enable him to cultivate the same to greater advantage.

Simon M. O. Bangen, Crookston, Minn. Pneumatic Straw Stacker.— The main object of this patent is to provide a simple and inexpensive pneumatic straw stacker, adapted to be connected to an ordinary threshing machine in position to receive the straw and chaff therefrom without the use of a conveyer or raddle rake, and without passing any portion of the material through the fan; and also to arrange the fan out of the way of the material, so that there will be no liability of the cylinder teeth or other

heavy objects accidentally getting into the fan casing and causing injury to the machine: and also to arrange the major portions of the air intake openings of the fan casing at the points where the fan starts to take in the air and to gradually reduce the size of the air intake openings as the fan travels around, and to close the fan casing where the same is connected with the air trunk, thereby enabling the fan to drive the air into the air trunk more effectively and to increase the force of the air blast.

Charles Karpp, Flushing, N. Y. Two patents. Assignor of one half to H. Hermann Lumber Co., New York, N. Y.—One of the objects of the first patent is to provide a rotary molding cutter head, having a plurality of cutters or tools capable of ready adjustment, and it consists of a head having an annular series of projecting peripheral cutter-supporting extensions, provided in their outer faces with dove-tailed grooves, adapted to receive dove-tailed ribs provided on each cutting knife. Transverse screwthreaded perforations are formed in the cutter head, which are adapted to receive screws, the backs of which contact with the dove-tailed ribs of the cutter knives and lock the same in

The second patent has for its object to provide a rotary cutter for plain work and it consists of a hexagonal cutter head, tapered transversely of itself and provided on each side with cutter receiving faces, disposed at an angle of one hundred and twenty degrees to each other, thus causing the knives to be arranged at an angle of sixty degrees to each other and affording a smooth and shear-like cut on all pieces of wood, and enabling the knives to be sharpened without removing them from the cutter head.

George C. Givens, Pea Ridge, Ark. Beef Steak Tenderer. Assignor of one-fourth to J. P. Brown, Rogers, Ark.—The object of this invention is to provide a simple and inexpensive meat tenderer adapted to be easily operated, and it consists of two rolls arranged one above the other, the upper roll being corrugated to form annular grooves and the lower roll provided with longitudinal ribs and grooves, the two rolls being rotated by common gear, thus providing an efficient means for breaking the fibers or tendons of the meat when it is inserted between the rolls.

George W. Hahn, Indianapolis, Ind. Metallic Horse Collar.—The object of this invention is to provide a horse collar having increased strength, durability and efficiency, and to enable the same to be cheaply manufactured and assembled. It consists of two thin metallic sides forming a complete front for the collar and detachably secured to the pads which go to make up the collar, the metallic sides being provided at the top and bottom with simple and efficient adjusting means for permitting the collar to be fitted to horses of various sizes. A metallic neck yoke pad is supported at the top and made selfadjustable.

Oscar C. Jefcoat and Laurie S. Trotti. New Brookland, S. C. Railway Switch. — The object of the present invention is to simplify and improve the construction of railway switches, and to provide one equipped with track devices operated and controlled from the cab to throw the switch in either direction for causing the train to take either the main track or the siding, as desired. A further object is to provide a switch of this character having track devices, adapted to insure a positive movement of the switch rails in the desired direction, and capable of securely locking the same in each position.

Charles Catlett, Staunton, Va., and Benjamin F. Childress, Lynchburg, Va. Fractional Insurance Policy.-The object of this invention is to provide an insurance policy in the form of gummed coupons, adapted to permit accident or other insurance to be readily sold for various periods of time, and enabling a purchaser to use fractions of such insurance either to provide continued insurance covering such periods, or to provide it at intervals until the amount of insurance has been consumed. The gummed coupons which provide such fractional insurance are to be pasted on the exterior of an envelop or postal card, and transmitted through the mail to the beneficiary, so as to be canceled either by the signature of the insured or the postmark of the govern-

James A. Fuller, Atlanta, Georgia. Cotton Chopper. Assignor of one-half to W. A. Teat, Atlanta, Ga.— The main object of this invention is to provide a cotton chopper, adapted to remove the soil from each side of the cotton plants preparatory to thinning out the same and to guide the plants to the cutting means. The invention consists of overlapping rotary cutting disks adapted to engage and cutthe plants, one of said disks being provided with one or more recesses, which interrupt the cutting edge and permit uncut plants to be left at regular intervals along the row. The invention also comprises means to cultivate the soil at each side of a row of cotton plants, and means for throwing the soil towards the plants after the chopping operation has been completed.

Ferdnando Roush, Le Mars, Iowa. Grass Catcher for Lawn Mowers. Assignor of one-half interest to George C. Countryman, Le Mars, Iowa.—This invention has for its object to provide a grass catcher for lawn mowers, and it consists of a receptacle open at its top and rear end and pivotally mounted on the frame in front of a lawn mower, with a hood or casing mounted over the rotary cutting knives to direct the cut grass into the receptacle. Another feature is the provision of a handle pivotally attached to the receptacle and extending along the handle of the mower to facilitate the dumping of the receptacle without the operator being compelled to stoop.

Raymond M. Dixon, Martinsburg, W. Va. Lid Holder.—The object of this patent is to provide a lid holder adapted to be applied to large or small kettles, or other culinary vessels, and capable of securely holding the lid thereon to retain the solid contents within the receptacle, while the liquid is being poured off. The invention comprises two wire frames, one having spaced sides terminating in lid-engaging hooks, the sides being connected at their rear by a transverse wire having a central eye, the other frame having a central wire extending through the eye, the front end of said wire terminating in loops engaging the spaced sides and the rear end provided with a handle and terminating in a lid-engaging hook. A coiled spring engages the loop of one frame and the handle of the other and tends to bring the hooks in close relation.

Irenas J. Palmer, inventor; Fred L. Gleason, assignee, Olean, N. Y. Padlock.—The object of this patent is to provide a padlock, designed primarily for use on railroad cars, and adapted to be locked either by a key, which forces the lock bolt into engagement with the shackle and is only released by breaking the key; or by a seal which engages the shackle and extends through the lock frame, permitting the shackle to be released only by breaking the seal. The lock may also be latched only

when not sealed or fastened with a key, thus permitting the lock to be easily opened.

Clarence F. Umholtz, Bristol, Tenn. Vehicle Wheel Bearing Mechanism.—The object of this patent is to provide a bearing for the steering wheels of self-propelled vehicles, and adapted to be so arranged that the wheels will not only not be thrown to one side when they meet obstructions, but wilk be maintained in their position straight ahead, and will automatically return to said positions after they have been turned to one side or the other by the steering mechanism. Ball bearings are provided at all points where friction is likely to be present, and a cap excludes all dust from the bearings.

Stephen O. Rice, Gates, Oregon. Cream Cooler.—The main object of this invention is to provide a cream cooler, adapted to be used in connection with a centrifugal separator, to immediately cool the cream and aerate the same, and improve its taste and yet retain the quantity. The cooler comprises a cylindrical corrugated receptacle, adapted to contain a cooling medium and provided with a conical cover, and also provided at its top and bottom with bails, one for attaching it to the separator and the other for supporting a bucket beneath the cooler.

Ira Boyd, Pond Hill, Pa. Two patents.—The first patent has for its object to provide an ice cutting machine, adapted to be driven and operated by an internal combustion engine carried thereby, and provided with a guide carried by the machine, adapted to engage the edge of the last cut and to gage the width of the strip to be cut. There is also provided an intermittently operated breaker carried in rear of the cutting saw, to break the strips into cakes of the desired size.

The second patent relates to an ice shaping machine, and has for its object to provide a machine for shaping pieces of ice into blocks of a desired size. The device comprises a frame having ice feeding wheels mounted thereon, and an oscillatory saw frame carried thereby, said frame supporting a rotary saw, adapted to swing into the piece of ice and cut and shape the sides thereof, and a horizontal saw carried by the frame at a point beyond the rotary saw for shaping the top of the block, the feeding and cutting means being driven by a common operating means.

Morgan E. Jolliffe, Uniontown, Pa., and John H. Cowan, Jefferson, Ohio. Safety Attachment for Mine Elevators. -The object of this invention is to provide an apparatus, capable of being readily installed in mines so as to insure safety to persons using the cage of the elevator in going to and returning from their labor in the mine shafts. The apparatus is provided with means for preventing the destruction of or injury to the property in case the engineer, who occupies a position remote from the cage, should accidently permit the said cage to exceed its proper limit of travel. It is also provided with means to cut off the supply of steam to the steam engine and simultaneously apply the brake for stopping the hoisting mechanism connected with the cage. Provision is also made for gradually and positively stopping the cage before the bottom of the elevator is reached, and also allow the cage to ascend to the passenger landing and to bring the cage to a gradual and positive stop should the cage, while carrying passengers, be carried upward past the passenger landing. The invention is also provided with an upper or emergency stop, so that should the engineer overwind the cable, it will effect a sudden application of the brake to positively stop the elevator cage.



Advertisements inserted in this column for 10 cents a line (about 7 words) each insertion. Every new subscriber sending \$1.00 to The Inventive AGE will he entitled to the AGE one year and to five lines three times FREE. Additional lines or insertions at regular rates.

FOR SALE-U. S. Patent No. 967,746, Sash Holder, Will sell outright or on royalty basis. For particulars, address Frank E. Erickson, Marquam, Oregon.

B OR SALE-Patent No. 965.429, dated July 26, 1910. Steel Rail Joint. Address, William Arndt, 711 South Eleventh Street, Goshen. Indiana.

FOR SALE—Patent No. 969,302. Switch Operating Apparatus. Motorman can arrange switch with foot without leaving platform of car, whether car is going at a fast or slow speed. For particulars, address Franz Schad 309 Elm St., West Hohoken, N. J.

For Sale-U. S. Patent No. 972,127. Animal Trap. Will sell reasonably. Investigate and make me offer. Address, A. L. Newell, Route No. 1, Frost, Texas.

FOR SALE-Patent No. 970,904, dated Sept. 20, 1910. Post-mold for concrete posts. For stretching the reinforcing wires before filling molds. Canadian patent pending. Address, G. H. Fenske, Clark, Missouri.

FOR SALE—Canadian Patent No. 125,147. Locking Whip Socket. For cash only to highest hidder the last of my foreign patents. For further information address, Severin Lilland, Level Lunction Lower Jewell Junction, Iowa,

For Sale-Patent No. 969,081. Drill sharpener for hand steel for mines and prospectors. Very simple, and can he manufactured at small cost. Write for terms. Address, R. A. Schmidt, Bayard Station. New Mexico.

FOR SALE—Patent No. 967,467. A front wheel truck for self binders and general farm traction purposes. The machinery may he arranged to comhine or transmit power to front or hind wheels as needed for greater pulling power. Has heen used onhinderfor three seasons. Saves time and horses, and makes ideal square corners. Write for information and terms for shopright. Address, T. E. Lind, Moose Jaw, Sask, Canada.

For Sale — Foreign patents for The Wells Butter Worker, in Canada, Mexico, Belgium, France and England, Address, Miss Ella Wells, R. F. D. No. 5, Shelhyville, Ky. mar

For SALE — Patent No. 547,581. Windrow Baling Press. A great lahor and hay saver. Simple yet powerful. Address, Jacob Barens, Altus, Ark.

For Sale or royalty—U.S. Patent No. 968,769.
An Improved Electric Center Grinding Machine. This machine is superior to all other machines on the market, For particulars write, William A. Ireland, No. 47 Johnston St., Newburg, N. Y.

Patent No. 960,540, dated June 7, 1910.
Pruning Implement. An entirely new and original idea. For particulars apply to I. E. Guest, 2708 Champa St., Denver, Colo.

FOR SALE-Patent No. 966.298, dated Aug. 2, 1910. Sink Cover. U. S. and Canadian. For particulars address, Edith M. Beland, Box No. 326, Lebanon, N. H.

P OR SALE-U. S. Patent No. 961,794, and Canadian Patent No. No. 124,625. Wire Cutter. Especially for cutting galvanized wire rope. Will sell outright or on a royalty hasis. No reasonsell outright or on a royalty hasis. No reasonable offer refused. Address, William Peters, Congress, Arizona.

For Sale-U. S. Patents No. 959,283 and No. 973,456; Canadian patents No. 119,978 and 127,287, envelope sealing and stamping machine. Best invention out for this work. Will sell outright, If interested and willing to pay a good price for a good thing, address, E. J. Abbott, Mission City, B. C., Canada.

FOR SALE-U. S. Patent No. 961,290, dated June 14, 1910. Replanting attachment for cultivators. A boon to all corn growers. Will sell outright. If interested, address, William Faust, Higgins, Texas.

Por Sale-Patented wire guide for paper-making machines, Patent No. 906,877. Address, 1050 East Eighth St., Erie, Pa. feh

FOR SALE-Patent No. 957,561, dated May 10, 1910. Quilting Frame. Something every family needs. The handlest frame ever made. Will give a good commission if sold soon. If interested write me. Fred Jakoh, Bartley, Nebr.

FOR SALE - U. S. Patent No. 947,865, and Canadian Patent No. 127,371, on a Door Catch. Either outright or on royalty. Address. William D. Tauhert, care Alfred Nuffer, Hills,

FOR SALE-Patent No. 959,481, dated May 31, 1910. Automatic Rivet on Scissors. Cuts clean, saves worry and time for women. Part cash and royalty. Address, John W. Dowden, Box 122, Reeves, La.

FOR SALE—Patent No, 931,287. Permutation, Keyless Lock. May be used on trunks or suit cases; cannot be picked; no danger of losing key; profitable invention if properly handled. No reasonable offer refused. Address, Wm. Erhardt, 112 Munson Street, Astoria, Long Island, New York.

FOR SALE-Patent No. 960,942, dated June 7, 1910. Automatic Pump. Will sell outright at a reasonable price. Address, Samuel J. Jackson, Pleasanton, Alameda County, Cal. feh

FOR SALE—Patent No. 962,161, dated June 21, 1910. Gas hurner for furnaces. Uses one-fourth less gas than other hurners; will not flash out in your face when furnace door is opened. Will sell outright or on royalty. Address, Thomas Mowcomher, Elkland, Pa. feh

FOR SALE—Patent No. 963,417, on royalty or outright, Device for Hanging Storm Windows and Screens. The only invention of its kind. Can he manufactured at small cost. Address, Edward C. Brown, Bismarck, North

FOR SALE-U. S. Patent No. 958,672, and Canadian Patent 126,790, on Self-Waiting Tables. Address, Karl J. Olson, P. O. B. 392, Gladstone, Michigan.

FOR SALE or exchange for real estate—U. S. Patent No. 950,630, dated March 1, 1910; Canadian Patent June 6, 1910. Trolley Poles. Can't come off wire. Very good invention. For particulars and price address, Henry Brod, St. Charles, Mo. St. Charles, Mo.

FOR SALE—Patent No. 959,309. Car Fender. Can be manufactured cheaply. Will sell outright or on a royalty basis. Cheap for quick sale. Address, A. H. Carter. 2235 Cutter Ave., Canton, Ohio.

For Sale — Patent No. 956.542, dated May 3. 1910. Peterson's Automatic Damper Control. Simple, durable, reliable and practical. Something needed in every home, store, factory and public huilding. Will sell outright. or will consider a reasonable royalty proposition. Address, Hjalmar Peterson, Falun, Wisconsin.

FOR SALE — U. S. Patent No. 939,727 and Canadian Patent No. 155.875. Snap Hook. Automatic adjustment and easy operation; capable of various uses and is self-locking. Will sell outright, or for any state or county. Address, Matti Maki, Grelland. North Dakota.

F OR SALE or on royalty-U. S. Patent No. 961,174, dated June 14, 1910. Micro-adjustable foot-arch support. Worn in insole. For weakened or flat feet. Wearer can raise or lower hy turning a screw. Supports either inner or outer arch of foot as comfort suggests. Result of eight wars professional study, and experiment. eight years professional study and experimentation. Splendid article for growing mail order business. A. M. Smith, D. O., Hagerstown, Md.

WANTED.

W ANTED—A company to manufacture a bag holder made of sheet iron. U. S. Patent No. 968,349. dated August 23, 1910. Will have patent for Canada in a short time. Address, patent for Canada in a short tim Louis Hanson, Cottonwood, Idaho.

WANTED—Twenty per cent interest in one of the hest inventions for financial assistance; \$250 to be used for protecting invention, making models, etc. For further particulars address, W. M. Ramershofen, 1410 Hyde Street, San Francisco, Cal.

W ANTED—To sell interest in patented office and library specialty recently placed on the market. Purchasers duplicating orders hoth in U.S. and foreign countries. For full particulars address. Oscar Dreher, No. 213 Wallace St., Stroudsburg, Pa. feh

Electrical Review and Western Electrician

Published weekly from the center of the industry, this publication is in the best possible geographical position to gather and present the most important and interesting news of the entire electrical industry.

SUBSCRIPTION PRICE

U.S. \$3.00 per year, Canada \$4,00 per year, Foreign Countries \$6.00 per year. Sample Copy Free

It is seen and read by practically every buyer of electrical material in this country and abroad. Advertising rates on application.

ELECTRICAL REVIEW PUBLISHING CO., 507 Marquette Bldg., CHICAGO.

A NEW BOOK FOR INVENTORS Patents and How to Make Money out of Them,

By W. B. HUTCHINSON.

This is the only book published, giving a detailed and full account, from the author's actual ex perience, of just what steps are necessary from the time the invention is conceived, to the time it is sold, with a clear and concise resume of the law and practice, legally and commercia :ly, of trade-marks and copyrights. It also tells accurately How and What to invent. How to sell Inventions, Place them on the Market, Interest Capital in them, and to successfully Promote a Stock Company. It also contains an index of forms worth double the price of the hook to any one interested.

ELEGANTLY CLOTH BOUND.

GOLD STAMPED. \$1.00 Postpaid.

Sent with one subscription to AGE for \$1.50. Or will sell separately.

Address-The Inventive Age Pub. Co.,

918 F St., N. W. WASHINGTON, D. C.



A VALUABLE OFFER TO INVENTORS.

A Complete Outfit of Printed Matter for \$20.

- 1. A zinc etching of your invention for use in printing letterheads, envelopes, circulars, etc.
 - 2. One thousand printed circulars.
- 3. Five hundred envelopes with your name and address printed in the
- 4. Five hundred letterheads with a cut of your invention, and your name and address neatly printed thereon.
- 5. A list of manufacturers in the special line of your invention.
- 6. A form letter to be followed in conducting your correspondence with manufacturers and others.
- 7. Four dozen deeds useful in selling state, county, town or shoprights. Address:—

INVENTIVE AGE PUBLISHING CO. Dept. O. WASHINGTON, D. C.

ATTENTION INVENTORS!

LISTS OF MANUFACTURERS FURNISHED.

We have increased our facilities for furnishing lists of manufacturers, and now cover every line of industry. The names are obtained from well known directories.

Our charge for each list is one dollar.

In ordering, please state specifically the class of manufacturers desired. Address: Inventive Age Pub. Co., Dept. M. 918 F. St., Washington, D. C.

Every subscriher when sending \$1.00 is entitled to a free advertisement, not exceeding five lines. of any patent in which he may he interested. The ad. will be inserted three times.

THE INVENTIVE AGE PUBLISHING CO., Washington, D. C.
I herewith enclose \$1.00 for one year's subscription to
"THE INVENTIVE AGE."
I also enclose ad. for insertion in the (Patents for Sale*) (Want*) column of your paper.
NAME
P. O
State

*Please indicate in which column you want the ad. inserted.

N. B.—Remit in the way most convenient.



Established 1889.

Published monthly by

THE INVENTIVE AGE PUBLISHING CO.,

National Union Building, 918 F Street, N. W., WASHINGTON, D. C.

THE INVENTIVE AGE is sent, postage prepaid, to any address in the United States, Canada, Mexico, Hawaii, and Porto Rico, for ONE DOLLAR 2 year; to any other country, postage prepaid, ONE DOLLAR AND TWENTY-FIVE CENTS.

Correspondence with inventors, mechanics, patentees, and manufacturers, is invited. The columns of this journal are open for the discussion such subjects as are of general interest to its

Technical matter is particularly desired. We want practical information from practical men. THE INVENTIVE AGE is independent.

Special facilities for furnishing cuts of any patented device together with descriptive article.

Business specials 10 cents a line each insertion: 7
words to the line. No advertisement less than 25

Address all communications to

THE INVENTIVE AGE PUBLISHING COMPANY, WASHINGTON, D. C.

Entered at the Post-office as 2nd class matter.

WASHINGTON, D. C., FEBRUARY 1, 1911.

Auction Sales of Patents. In the December issue of the Age we called attention to a recent patent selling scheme which had been devised by a man operating under the name of "The Patent Exchange." We commented on the scheme, and showed how foolish it was to expect any returns from such a source. We are pleased to announce to our readers that this swindling concern has been driven out of business. The visits of the Patent Office officials and the Post Office inspectors, as well as the local detectives, got on the nerves of the nervy fellow who had started this scheme, and as a result he has decamped, taking with him the thousands of dollars which he had reaped as a result of his fraudulent operations. It was a 90-days wonder while it lasted. We are advised that he has gone to someneighboring state where he is said to be engaged in the legitimate business of raising chickens. The pity of it all is that the machinery of the law is so slow in this country that a man may start a scheme of this kind, and, using the mails for his purpose, and thousands collect hundreds of dollars from those who can ill afford to spare it. What the law officers should do is to go after this man and compel him to refund to the original donors the money that he has collected, and then put him in jail for his fraudulent acts. For a man of that kind to get off as easily as he has succeeded in doing, offers a temptation to others to enter the same field and collect a little needed capital by some fraudulent scheme. If there were a law compelling people before they engage in business of that kind to procure a license and prohibiting them from operating without a license, and making the license revocable upon proof of dishonest practices, such swindling operations could be stopped more quickly than at present.

Ten Wonderful Years.

The close of the first decade of the twentieth century seems to offer an appropriate time to review what has been accomplished in industrial and economic affairs during the last ten vears. The world was very well satisfied with its progress at the end of the nineteenth century. It was inclined to congratulate itself on its remarkable achievements, especially during the period from 1890 to 1900, and to wonder if as much progress would be made during the following decade. And yet when we look back upon the relative positions now and then, we are inclined to smile at our former attitude. To begin with, we have as a nation increased 21 percent in population. The world as a whole has seen revolutions and battles that have worked such great political changes that the decade will be ranked as historic. Who ten years ago would have thought of Russia, Turkey, China and Persia with parliaments, or guessed the prowess of the Japanese, or forseen a republic in Portugal? The industrial changes are no less dramatic. The most striking political phenomenon of the age has been the disappearance of the bludgeon from commercial methods. The tendency is toward civilized competition. Public policy, like an industrial policeman, is beginning to guard the independent manufacturer against assault and battery in the markets of the land. And if the ethics of the manufacturing trades have improved, the methods have improved even more. The most striking development in the decade has been the marvelous increase in the use of electrical power; the next is the growth in manufacturing made possible by the perfection of the gasolene engine, which involves amazing developments in transportation by land and sea and air. This is an electrical age. Only eight years ago, the total amount of power used by central stations was less than 24 horsepower for every thousand of population. Now these figures have been quadrupled. There are in this country today more than thirty thousand companies, firms, individuals and municipalities that are manufacturing electricity for one commercial purpose or another. They represent a capitalization of more than seven billion—or seven times the census figure for capital invested in the iron and steel industries. Practically, that mass of capital and the industry upon which it is based are a creation of the last decade. The primary function, of course, is to supply light. This function has grown so greatly during the ten year period that today there is an incandescent lamp in use for one of every two people in this land. Besides this, there are thousands of plants that generate their own electricity and run machinery by it. Printing, brick making and cement manufacture may be mentioned in this connection. The long distance transmission of the current-an industrial factor of unknown potentiality created within a period so short that young men re-

member its very beginnings-has worked miracles. It found Los Angeles a small city and raised it in a decade to a manufacturing giant. It has done the same with Spokane. A river far up in the mountains of Montana is chained to drive the drills that rip out the riches of the copper mountain at Butte. A stream in central Colorado is forced to transform other cities into centres of miscellaneous manufacturing; a river in California is harnessed to pump its own water out over the desert to make it bloom; another in North Carolina is conquered to lure the cotton mills down from the North and back to the land where the cotton grows. Niagara is the most powerful of all the slaves of industry. The curbing of the rivers

to the needs of man is the glory of the age in which we live. The revolution in speed and in convenience of transportation is no less remarkable. At the Columbian Exposition of 1893 there were two "horseless vehicles" as they were then called, both hailing from abroad. In 1900 the first automobile show in America, held in New York, disclosed a very small assemblage of cars. The automobile was still an occasional and much misdoubted sight upon the streets. Since then, the internal combustion engine has proved its merits so conclusively that it has absolutely supplanted steam for low and intermediate powers. The pedestrian today is kept busy dodging automobiles and motor cycles. Our waters are alive with motor boats. This sudden success is all the more striking, when we remember that long before 1900 the gasolene engine was in all essentials complete. While we were fighting our Civil War, a Frenchman hit upon the design which embodies all the important principles of the modern standard. In the year before our Centennial, only three patents pertaining to the internal combustion engine existed. The number has increased since then at the rate of about 80 a year. Yet in the last decade there has been hardly a single basic invention of use to the gasolene engine. The work has been one of improvement and application. It is only in the last few years, too, that people have overcome the notion that the automobile is merely a speed device for pleasure. Half of the gasolene vehicles manufactured are for purely commercial purposes. Taxicabs and motor buses represent the majority of these, but the car is adapted to an ever increasing variety of uses. The express companies and the department stores run huge trucks at a speed and with a load that would be impossible to a team of six horses. In ambulances, in emergency wagons for repairing tracks or pipes, in fire engines, in army transports, in all sorts and classes of agricultural machinery, gasolene has proved itself supreme. The motor cycle—the "little brother of the automobile" is growing lustily in importance. Arranged to carry from 300 to 500 pounds of load, it has come into sudden popularity in the past year for delivery and other purposes. It can go where its big brother cannot; its first cost is less and its

"up-keep" almost negligible. It is a necessity in the police departments of more than a hundred of our cities. Letter carriers are equipping themselves with it, and it will greatly amplify the rural free delivery system here, as it has done abroad. Messengers, collectors and inspectors who must make many stops save time by its use. The country doctor finds it cheaper and quicker than the horse. are being Traveling salesmen equipped with it as a means for covering territory faster and farther than railroad routes and rates make possible. A company in New York agrees to furnish to commercial houses an outfit, driven by a ten dollar a week boy. This is capable of delivering 300 packages a day, and the rental, including the boy, is \$30 a week. It can, if necessary, do in one hour the horse's daily stint of thirty miles. Space fails to tell the uses to which the stationary gasolene engine is putnot only by the small manufacturer who uses it wherever light and cheap power are required, but on the farm for irrigation, lighting and a hundred convenient things. Efforts are being made to adapt a special type of detachable motor to the motor cycle, and it is predicted that once such a motor is arranged, which may be used for transport or set up for stationary work, it will do for the small farmer what the motor wagon and the gasolene tiller and harvester have done for his extensive brother.

It is in the marine field that the achievements of the gasolene engine are least obvious; yet it is here that its highest powered types have quietly established themselves on a firm basis. When the first engines were fitted into small craft about 1895, mariners sneered. By 1900 they had to admit the speed of gasolene craft, but they said they were unreliable. They began to prick up their ears when in 1905 an American shipbuilder delivered ten torpedo boats to the Russian navy, each having two six cylinder engines and 600 horsepower. It was evident that the gasolene motor was good for the most silent work of war. It is to it, indeed, that we owe the submarine, as both the Holland and Lake types depend on it for cruising on the surface and for storing electrical energy for submerged work. Contrary to popular opinion, of all the 200,000 motor boats now in use, the many pleasure craft are in the decided minority. The industry is dedicated to commerce. The motor boat has completely changed the fishing industry. Practically all our lobsters are caught with motor boats, and the same is true of oysters.

The achievements of the gasolene motor in the air are too recent and too well known to need mention here. The only limit to the uses of the internal combustion engine, apparently, is merely the cost of gasolene.

Of even more fundamental importance than the above has been the steady conquest of disease that has been made in the last decade. The world is far safer to live in than it was ten years ago. The death rate has been reduced. We live in a new area of health, thanks to a better

knowledge of sanitation and of right living. We have learned, too, how to fight the great diseases. The important medical investigations of the decade have been for the discovery of causes. Twenty thousand babies annually are saved from those Herods of the time-fevers of childhood, dirty milk and overcrowding. The discovery of the skin tests for tuberculosis, by which the disease can be located in its earliest stage, when it is as curable as measles, and long hefore it has become infectious to others. has made it possible to cut down the death rate from this malady to an amazing degree. Our bestnew weapon against the next deadliest disease, typhoid, has been the discovery of the transmission by that advance agent of pestilence, the house fly. The war against insects and vermin of all sorts has been one of the features of the last ten years. The most dangerous enemies of the race are bugs and bacilli. The fly is recognized as the deadliest animal the human species has to contend with; the word has gone forth for his extermination from the face of the earth, and also for that of the mosquito who carries yellow fever, his cousin who transmits malaria, the tsetse fly that carries sleeping sickness, the rat that conveys plague, and the mouse that probably transmits measles. Ten years ago, yellow fever menaced our seaports from the hot beds of infection in Cuba, Panama and Central America. We are now practically safe from a pestilence that slew a hundred thousand of our people in the last century. The tropics are now open to white colonization for the first time since the dawn of history. Even pellagra bids fair to fall into this insect-borne class, as the latest investigation show that it is due to the bite of a gnat, and not to the consumption of spoiled corn. The hookworm is a recent addition to the recognized class of enemies of mankind, but since we have also learned how to eliminate him, we may congratulate ourselves upon the enormous addition to the economic efficiency of a large section of our country, that can be so readily and cheaply secured.

The two most powerful weapons forged in the decade for the direct cure of disease are the antitoxin which has been found so valuable in spinal meningitis, and the discovery of the cure of syphilis—an arsenic compound, which actually destroys the germs in the blood within 48 hours.

It will thus be seen that apart from our ingenious inventions, our new speeds, our ability to speak and move through the air adds luxuries and conveniences without number to our lives, real progress is being made for the general betterment of mankind. We may in time look forward to a diseaseless world, and to a world in which the level of efficiency and of consequent happiness will be far higher than it has ever before been.

THE INVENTIVE AGE contains sound advice to inventors and patentees. For lack of such advice many have lost money. Subscription price, one dollar a year.

New Cooking Range.

The good housewife who uses the coal fire range is only too cognizant of the difficulties of the device. Every time the oven door is opened to examine the contents, a blast of cold air enters which may seriously interfere with the success of the task in hand. A new range has an inner door of glass, which permits the food to be inspected without admitting the cold air. It also has a boiler which can be removed as desired, and the grate is fitted with a folding down front. This is especially useful, as it renders access to the grate for cleaning simple and easy, as compared to the different manipulations necessary when the front bar is irremovably fixed.

Electric Lamps Mark Hours.

A distinct novelty in clock construction has been built for the United States postoffice and custom house at Newbern, N. C. The clock dials are so arranged that they may be revolved to provide access to the electric lamps that mark the bours. The clock has four dials, and instead of bearing numerals to indicate the hours, there are opalescent glass disks which show white in the daytime. At night electric lamps are lighted behind each disk, so as to illuminate them. Behind each dial in the building there is a window, through which access may be had to the lamps, and it is for the purpose of hringing the lamps within reach of the window that each dial is mounted to rotate. The hands, which are of cast aluminium, carry an electric light at the hub and also at the point. The lamps are red, so as to distinguish them from the dial lamps. The clock machinery is made very powerful, to carry the great weight of the hands, with the wiring and lights attached.

Electro-Turbo Locomotives.

So successful has the steam turbine proved in high power plants on sea and land that inventors are trying to find ways to adapt the idea to the railway locomotive. A locomotive of this sort is now being built in Scotland.

One drawback with the steam turbine is that it is only economical at very high speeds. In this case the turbine makes 3,000 revolutions a minute. It then becomes a difficult practical problem how to reduce this speed to the slow speeds used in the ordinary practice. Reducing by means of the old cog-wheel gears becomes too complicated and round-ahout. So in the new locomotive the problem is solved by making the turbine run a dynamo, and then using the current from the dynamo to run electric motors of the usual types attached to the driving wheels. It would seem that this is a very indirect way of utilizing power, but electricity has been so well mastered that there is less loss turning the power into current and then back into power again, at a lower speed, than in any other known method of conversion. In this new locomotive. there is also great steam economy, for the steam after going through the turbine is condensed and sent back into the hoiler, to be used over and over again. Thus a large part of the heat which is wasted in the ordinary engine is here saved.

Artificial Milk.

The price of milk, like that of all other foodstuffs, has been rising at such a rate as to warrant the application of the nursery rhyme "the cow jumped over the moon." As always happens in such cases, people are trying to protect themselves by finding some substitute that will be less expensive. The Japanese have been able to produce from beans something that looks like milk and has many of the necessary ingrediεnts; but a better imitation can be made from almonds. For the benefit of those who wish to escape extortion, the recipe is given below. Take balf a pound of nuts, remove their skins by pouring boiling water on them and scraping them, and then chop and grind them with a little water into a paste. This can be done with a mortar and pestle, or with any other available utensils. Of course, where the milk is produced on a large scale, the grinding can be done by machinery. The diluted paste is then strained to remove small pieces of the nuts, and thinned with water to the proper strength. Milk made from almonds in this way is practically equivalent to cow's milk. It has an agreeable taste and answers well in coffee, tea, etc. Left for several hours, cream will rise on it. and there is even casein in it, only it is vegetable instead of animal casein.

Typhoid Inoculation.

We are already inoculating against smallpox and diptheria, and the same method is proposed as a remedy against typhoid. This form of vaccination is said to have been successfully adopted in Germany, England and India, and well known patbologists in this country are in favor of its adoption here. Medical men of the United States army are considering the possibilities of treating the thousands of enlisted men in the service. It should by all means he applied, they say, to soldiers going to a place where the fever is generally prevalent. Experiments in several cities of the United States have shown good results. In a bospital in Philadelphia, the physician in charge inoculated himself and several others. The reactions were satisfactory, the fever and pain lasting four days, and subsequent tests with the blood showing immunity. The inoculations "took" better, it is said, than smallpox vaccinations. When a city is tbreatened with a typhoid epidemic, it is possible that it might be prevailed on to have all the school children inoculated with dead typhoid vaccines, as it does regularly with the smallpox serum. The nurses in hospitals caring for typhoid cases will also find this a valuable protection. It is no uncommon thing for orderlies and hospital attendants to be stricken with typhoid, in spite of the measures of precaution adopted. This will serve as an additional safeguard. Physicians are considering the advisability of further experiments with eating the vaccine. An army officer in England, connected with the Royal Army and Navy College, has made the trial, with satisfactory results.

The Steamless Battleship.

No naval news of recent years bas created such excitement in the engineering world as the announcement tbat the Dreadnought battleship type of the immediate future is to be witbout boilers, stokeholds and other prominent features of steam. The internal combustion ergine is to work tbese marvels, says Current Literature, and to render the mighty battleships of today obsolete. At present, it appears that the internal comhustion engine of the marine type has heen used only in submarines and other small craft. Wbether it has yet been brought to such perfection as to develop the 40,000 borsepower that would be required in the great battleships soon to he laid down for the British fleet, is problematical. A solution of the problem hrings us to the dawn of a new era in naval affairs. There are to be placed on the seas smokeless squadrons of great speed, with no funnels to binder fore-and-aft gun fire, and an enormous saving in space which would he devoted to saving and increasing fuel and ammunition. This would add greatly to the radius of a battleship and to its effectiveness in action.

The belief that the future lies with some form of gas engine, to the exclusion of coal, is now firmly established. The advantages to he gained from the use of internal combustion engines would be great. If speed was to be the constant, the engine room weights would be much reduced, and, in an increased proportion, so would the size and consequently the cost of the ship. Conversely, if size was the constant, either a higher speed could be obtained, or a vastly increased radius of action. A motor driven ship would not need the large engine and boiler room complement which steam engines and boilers demand; and perbaps most important of all, the filling up with oil fuel would be a speedy and clean proceeding, instead of the laborious and filthy task that coaling is. It will be a great gain when a ship can simply go alongside a tank and fill herself up with fuel through a pipe. The gain in time, and in fatigue to the crew, will be of inestimable advantage in time of war. The absence of smoke and of vulnerable funnels are other obvious advantages, and the abolition of the latter would greatly increase the arcs of fire of the

The navies of the world have come very near the limit of what is practical as a business proposition in connection with the combination of steam and coal. The proportion of fuel needed to get another knot out of a vessel beyond ber normal speed is not by any means in economic ratio to the fuel consumption under ordinary running conditions. An important question is that of hull design, and the same marine engineers who are working on the problem of adapting the internal combustion engine to the uses of large seagoing vessels are at the same time seriously studying radical departures in the matter of hull design, the hydroplane being one of the types so far favored.

CLASSIFIED list of Patents issued during the month appears in each issue of the Inventive Age. This keeps inventors and manufacturers posted in the art in which they are most interested. —We will send, postpaid, to any address, printed copies of any U. S. patent, with specifications and drawings, upon receipt of 10 cents per copy.--Please give correct data in ordering.--Address,

THE INVENTIVE AGE PUBLISHING CO., 918 F St., N. W., Washington, D. C.

LIST OF PATENTS

--:0:---

Issued October 11, 1910.

MECHANICAL PATENTS.

Continued from January Number.) Hat-frame-making machine.

Hat-pin holder E. A. Kochersperger Heat contained in slags, Utilization of ...

C. Vautin Moder E. A. Kochersperger Heat contained in slags. Utilization of ...

W. F. Brown Heat-exchanging device. M. Krupovess Heater. K. Orti W. F. Brown Heat-exchanging device. M. Krupovess Heater. K. Orti Heating receptacle, Electric. W. Richmond Heel-trimming machines. Counter-gnard for the properties of deplay-boxes. J. F. Benth Hog-hoisting machine. A. Hannaford Holder-on. C. Schofield Hopper. A. F. Odien et al Horses. Safety device for .R. H. Stronach Hose-clamp. T. Carroll Horse-releaser. A. F. Odien et al Horses. Safety device for .R. H. Stronach Hose-clamp. T. Harding Hose-rel. G. E. Kellar et al fee-cream cutter. W. A. Hutchinson Ice-harvoster. T. and W. P. Damond Igniter. E. F. Koehler Inhaler. E. S. Balthrop Internal-combustion engine. G. F. Swaln Iron-alhmin-glycerophosphate and making same. E. Fischer Ironing-board bracket. J. H. Frederick Ironing-board bracket. J. J. Barry et al Jar-cover-removing device. W. Murray Journal-tubricating device. J. A. Randel Key lock, Interchangeable E. J. Prindle Kite. W. Rode Label or wrapping machines. Feeding mechanism for W. and H. Rose Labels or wrappers. Mechanism for applying. W. and H. Rose Labels or wrappers. Mechanism for applying. W. and H. Rose Labels or wrappers. Mechanism for lighting miners' safety. J. C. Bowie et al Lamps at prearranged times from a given standard properties of the properties of the properties of Metal bodies, Making compound.

J. F. Monnot
Metal objects, Method of and apparatus for
producing coated. 2 pats. J. F. Monnot
Metal-planer. F. N. Pease et al
Metal sheets or bars, Machine for cutting
ont articles from F. Malton
Metal-working and other machines, Workfeeding device for A. W. Wigglesworth
Metals from wet-process liquors, Separating
J. H. Thwaites et al
Metals, Hot-working J. F. Monnot
Metevs. Port-plate for rotary, E. C. Brown
Micrometer C. E. Johnson
Milk-pasteurizing apparatus. H. Feldmeier
Milking appliance A. Bruce
Moccasin D. Hoyt et al.
Moistener, Stamp J. G. Summers
Moistening-roll A. Fachs
Molding-machine V. Mauck et al.
Molding-machine C. P. Bohland
Monkey-wrench F. B. Cntler

	THE	INV	E
Mop and brush holder, Combi	ned	oeber	
Mop and brush holder, Combi Mop-head	X. X T. V H. K	oung Veber cefer ion	
Motor-controlling apparatus. S. Motor-controlling apparatus. S. Motor starting-gear, Internal controlling apparatus. S. Motor starting-gear, Internal controlling apparatus. S. Motor starting-gear, Internal controlling apparatus. S. Motor wheel. J. X. John Mowing machiue, Reel-adjusting ism for. J. A. Be Muffler. J. A. Be Muffler. C. G. Have Mozzie-stopper for bottles, &c. T. Nut-lock. A. B. Mant-lock. A. B. Mant-lock. Oil burner, Crnde. W. Operating-table, Physician's au B. Ore-concentrator Ores, Treating. C. Packing. Packing-box Pad-holder E. Padlock and staple or hasp the R. Padlock. Combination. L. Paint, Isanitary dairy. L. Paint, Isanitary dairy. U. Paint,	lmer e nson e ng me	et al. et al. chan-	
ism forJ. A. Be MufflerC. G. Ha Necktie holderG	ekett (wley (. Dem:	et al. et al. andre	
Nozzie-stopper for bottles, &cT Nut-lock	:. W. 1 .cklin S. W.	gvans et al Wilt	
Nut-lock L. Nut-lock Oil burner, Crnde W.	W. F D. P	ifield	
Operating-table, Physician's au B. Ore-concentrator	o surg D. Th E. H.	eon's orner Moe	
Ores, Treating	A. L. J.	Cole Wahl	
Padlock and staple or hasp the	erefor. B. R	eeves	
stirrer forF. B.	Stock	mana	
Paper box machineryC. Paper folding machineA.	P. V F. Je D. P	'avra nkins eiano	
Paper, Manifold	7. L. 7. Tom orider	West pkins et al.	
Paper box machinery	I. C. R. I L. M.	Seipp Bailey Wade	
Pencil, LeadR. A. and A. Pencil pointerR. A. and A. Photographic apparatusH	.C. E T. W I. C. I	Taiser Tilson Hebig	
Piano PlayerS. L. Piano tuning pins, strings, & tive strip for	. Diek e., P . J. V	inson rotec- Veiler	
Pianos, Pedal mechanism for properated	eumat Gulbr speed	icaIly ansen regu-	
lating mechanism for pneumo for	atic ac .O. N baqneo	tions elson us	
operated A. G. Pianos, &c., Rewinding and s lating mechanism for pneums for Pile driving, Apparatus for sul Pipe forming machinery, Spir J. Piston coupling W. G	. O. ral H. T	Hou	
Pitman, Adjustable		Vogel Rice	
Planter, Pindal or peannt Plates or other tableware	O'Dono R. B.	oghne May	
Piston couplingW. G Pitman, Adjustable	. W. I M. D	todda owdy wall	
molds Pneumatic cleansing apparatus	A. . Moo	Haag rhead	
Propose catching trap, 8 pats	ratus. S. Jen .C. F.	nings Pike	
Plumbing apparatus for concommolds Pneumatic cleansing apparatus. Pnenmatic despatch tube apparatus. Post eard. Power apparatus. Power apparatus. Power operated drill, Portable. Power press. Power transmission and control ratus, Fluid. Power transmission mechanism Printing machine, Card. Propeller, Vibrating. Pulley block Pump Pump, centrifugal Pump for comparatively incolliquids.	.T. Gr . F. S	aham perry	
Power pressP. R. Power transmission and control	. S. Hahne Illing	Edler mann appa-	
Power transmission mechanism W. A	E. Fe	arson drick Monn	
Printing machine, CardX Printing machine, GuideX Propeller, VibratingB	I. II. I. H. (Mana Mana Poffey Roths	
Pump for comparatively inc	Schene A. E.	erman Guy Ssible	
liquids	t for H. M	Tilner water Terrill	
Pump for comparatively incliquids Pumps, Air pumping attachmen C. Pumping engine Rail cleaner, Third Rail point Rail joint Rail joint Rail joint Rail joint Rail joint Rail joint Railway tie Railway te	B. O. J. Coc timer	Gage ekrell. et al.	
Rail jointG. and M Rail jointW. P. Thon Rail joint, InsulatedC.	I. L. I ison F. Q	Baeon et al. Juincy	
Railway tie	. J. W W. z. S. I	essels Green Flatau	; !
Railway tie Railway trains, Automatic bra device for	. A. H ke apj . P. Z	awiey plying ackey	
ReceptacleA. C.	S. Se M. Ke	habad rwick	
Recording machineE. M. Reel holderO	Rauhe L. B. V	nstein Vedell Canio	i I
Recording machine. E. M. Reel holder	S. C. F B. Ben A. Wi	Unsey jamir Iliams	7
Relay, Electrical	. H. Stone g or e	North et al losing	
Retorts, Apparatus for opening the discharge opening of verti- Riuser and sterilizer, Combin B	iealC ed W.	. Bolz Beacl	Z 1
Riveting machine	.J. Gi ne, Tr C. And	llespic eating lersor	e g 1
Roll and core therefor, Oval Rolling mill guide	.s. W T. H	heelei . Nye	5 1
Rotary engineV.	L. C	apwel	1

Rubber cloth and making same, Enamcled. Rubber stamp
Rubber stamp F. R. Maddock
Salt and pepper holderH. W. Comstock Sash look
Sansage linking machineH. C. Goliring
Saw handle
Saw set
Saw set and joinerJ. W. Forrest ScaleR. H. Forschner
Scale, Total adding weighingW. B. Moon Scales, Approach vail for trackJ. A. Rishel
Scraping tool
Screwed connectionG. Muller
Sculptures, Apparatus for producing G. Erdbrugger Sculptures, Producing G. Erdbrugger Sculptures, Producing F. L. Shadley Sealing device, car E. L. Pitts Sealing strap, Shipping package E. C. Patchelor
Sculptures, ProducingG. Erdbruegger Seal, CarsF. L. Shadley
Sealing device, carE. L. Pitts Sealing strap, Shipping package
Seats Detachable sanitary covering for
toilet
ton
Separation of ingredients of mixed solid
Separator and stacker (Reissue)
Sealing strap, Shipping package R. C. Batchelor Seats, Detachable sanitary covering for toilet
Shaft engaging means, Adjustable
Shearing deviceS. L. Harwood Shingle machine. Upright hand saw
Shine Safety appliance for C. Fugaggi
Shoe cleaning deviceM. B. Seaman et al.
Shoe tongue, LacedL. A. Wirthlin
Sitter, strainer and masner. T. F. Devin Sign flasher, Electric R. D. De Wolf
Sign holderC. A. Woodrnff et al. Signal actuating meansA. T. Rackstraw
Shoe cleaning device M. B. Seaman et al. Shoe plate, Safety base ball E. Kinzel Shoe tongue, Laced L. A. Wirthlin Sifter, strainer and masher. T. F. Devlin Sign flasher, Electrie R. D. De Wolf Sign holder C. A. Woodruff et al. Signal actuating means A. T. Rackstraw Skirt evener M. E. Archer-Burton Slotting machine W. J. Hagman Smokeless briquet and making the same. R. A. Carter
Smokeless briquet and making the same R. A. Carter
Snap switch
Sparking plug G. Honold
R. A. Carter Snap switch. S. A. Koltonski Spark arrester W. P. Steele Sparking plug. G. Honold Speed indicator G. C. Buqno Speed varying and reversing mechanism.
Spool holder V. H. Canham
Spoon M. V. Putham Spout-hanger F. W. Thomas
Spring wheel
Stack pipe protectorT. E. Huffman, et al.
Stacker and loader, HayL. R. Shafto Stacker, PneumaticG. F. Conner
Stacker, Portable rotable hay
Speed varying and reversing mechanism. F. Mesinger Spool holder V. H. Canfiam Spoon M. V. Putnam Spoon F. W. Thomas Spring wheel J. Stallings Sprinkling apparatus G. W. McCoole Square C. H. Caldwell Stack pipe protector T. E. Huffman, et al. Stacker and loader, Hay L. R. Shafto Stacker, Pnemmatic G. F. Conner Stacker, Prenmatic G. F. Conner Stacker, Straw E. L. Shaffer Stairway or ladder, Counterbalanged C. R. O. Belles Stalk chopper J. King Stand for hammocks, conches, &c. W. J. MeBride Stereotelescope H. Jacob Stocking blank W. H. Ermentront et al. Stop Automatic rove P. Sharp
Stalk chopper J. King
Stand for hammocks, conches, &c W. J. MeBride
Stereotelescope
Stool, Folding
Stop motion for textile machinery
Stocking blank. W. H. Ermentront et al. Stool, Folding. W. J. Thefeld Stop, Automatic rove. P. Sharp Stop motion for textile machinery. P. Sharp Store service apparatus. L. B. Bethards Stove. E. Anderson Stove oven burners, Lighter for gas. J. G. Harvey Stovepipe clamp A. Schanfler Strainer, Sink. J. Bropson Street calling device, Automatic. R. M. McGee Strip severing machine. T. G. Paddock Stuffing box. J. H. Reese et al. Swaging and sizing machine, Automatic. A. D. Caverno
Stove oven burners, Lighter for gas J. G. Harvey
Stovepipe clamp
Street ealling device, Automatic
Strip severing machineT. G. Paddock Stuffing boxJ. H. Reese et al.
Swaging and sizing machine, Automatic A. D. Caverno
SyringeJ. Kussart Table implementH. J. Richardson
Table levelerJ. F. Switt Tamping machineH. D. Morgan
Tang
Teaching penmanship, Device for
Telegraphy or wircless telephony, Wire-
Telephone attachmentJ. W. Nilsson
Talaphane system Central A D T. Libby
Telephoues, Loek-out device for party line W. M. Bruce, Jr.
Textile fibers, ObtainingJ. E. Pfiel Threads or varns from warp-beams, Fin-
Swaging and sizing machine, Automatic. A. D. Caverno Syringe
TileJ. B. Dunn
TireE. H. Herndon
Tire, ResillientM. G. C. Dodwell
Tool carrier, Motor drivenA. Brien
Tobaceo pipe
10y
Toy beehive. M. Averill Toy house. L. V. Boyd et al.
LOS HOUSE CONTRACTOR TO DOSE CO ALL

Toy, Moving picture. E. W. Davis Toy, Tick-tack E. C. Regli Track joiut H. R. Anderson Train order delivering device. W. T. See Tramways, Curve for double rope. S. A. Cooney Traveling cases, Follower for. A. N. Bogen Trolley H. B. Potts Trousers hanger and stretcher. R. Davies Trousers stretcher Y. Takano Truck, Car. J. E. Simpson et al. Truck side frame, Car. W. D. Lowry Thrbine. G. Westinghouse Turbine M. Glass Turbine M. Glass Turbine Elastic fluid. W. J. A. London Thrbine engine, Gas. W. A. Reed Type measuring device A. H. Halloran Typewriter attachment E. B. McGilvary Typewriters and similar machines, Word
Traveling cases, Follower for. A. N. Bogen Trolley. H. B. Potts Trousers langer and stretcher. R. Davies
Truck, CarJ. E. Simpson et al. Truck side frame, CarW. D. Lowry TnrbineG. Westinghouse TurbineM. Glass
Turbine, Elastic fluidW. J. A. Loudon Turbine engine, GasW. A. Reed Type measuring deviceA. H. Halloran Typewriter attachmentB. P. Gibbs Typewriter attachmentE. B. MeGilvary
Typewriters and similar machines, Word counter forR. M. Pettey Typewriting and amonut listing machine, CombinedG. J. Barrett Typewriting machineG. C. Blickensderfer
Typewriting machineJ. T. Schaaff Typewriting machineH. S. McCormack Typewriting machineG. A. Seib Typewriting machineH. S. McCormack Universal jointC. A. Smith
Typewriters and similar machines, Word counter for
Valve, Blow offF. P. Hamilton Valve, Cellar drainerA. C. Dnrdin, Jr. Valve mechanism for air compressorsT. H. Smlth Valve or faucetT. R. Beggs
Valve or fancet
Valve spring retaiuerO. Blomberg Vehicle driving mechanism, Motor K. A. Kendrick Vehicle, Electrically propelled. W. Kohler Vehicle reachH. Higgin Vehicle reunning gearJ. O. Smith Vehicle seatC. B. Moore Vehicle spring gearN. J. Anderson Vehicle wheelA. E. Ellis Vehicle wheelG. H. Thomas Vehicles, Apparatus for antomatically raîsingF. Briaut
Vehicle wheel
Vehicles, Apparatus for antomatically raising F. Briaut Vehicles, Lamp attachment for F. Briaut Vehicles, Lamp attachment for T. L. and J. A. Riney Vending apparatus A. Heaton Vending machine H. L. Dupont Voting machine G. J. H. McElroy Voting machine J. H. Mcelroy Voting machine J. H. Myers Voting machine eontrolling mechanism A. J. Gillespie et al. Voting machine controlling mechanism C. Christensen Voting machine controlling mechanism C. Christensen Voting machine controlling mechanism Magon running gear, Dumping C. Christensen Wagon running gear, Dumping J. L. H. Young Washboiler J. O. Cooper Washing machine F. Panl, Jr. Washing machine W. P. Tippit Watch, Stop E. A. Dupuis Water eloset S. W. Lewis Water heater T. J. Radke Water meter J. B. Koelblen Waterer, Stock J. E. Townsend Weaving mechanism W. H. Drury Weeder J. E. Williamson
Voting machine
Wagon running gear, Dumping L. H. Young WashboilerJ. O. Cooper
Washing machine. F. Pant, Jr. Washing machine. W. P. Tippit Watch, Stop. E. A. Dupuis Water eloset. S. W. Lewis Water heater. T. J. Radke
Water meter. J. B. Roeblen Waterer, Stock. J. E. Townsend Weaving mechanism W. H. Drury Weeder L. C. Pond Wells, Electric heater for oil.
Wheel. L. K. Thorspeck Wheel-rim, Detachable. G. E. Kipp Wheels, Construction of cleetric. J. Spyker Window P. D. Corrigan
Window screen. F. Sprague Window ventilating device. W. H. Witmer Wire machine, Barbed. D. C. Smith Wire stretcher. W. F. Shipman Wire winding machine. J. N. Johnson
Weeder. L. C. Pond Wells, Electric heater for oil.
DESIGNS.
Carpet
Carpet W. A. Elllot Ceiling plate H. Gothherg Emblem C. L. Thatcher Fabric, Textile E. Sins Fabric, Textile P. Dupont Musical instrument pedal H. Sandner Percolator cover C. F. Smith Snoons forks or similar articles Handle
Spoons, forks, or similar articles, Handle forT. B. Lasher

Issued October 18, 1910.

MECHANICAL PATENTS.

in Both in Cita I in Britain
Acid, Making hypochlorousH. V. Walker
Adding machine, &c., Device for paying out
paper to and winding np paper from
Adjustable chairA. N. Hornung
Advertising and lighting device, Cigar
H. Miller
Advertising deviceJ. B. Coughlin
Air brakeJ. E. Henris
Air-brake systemA. Doan
Air compressorJ. R. Burrows
Air springA. Sharp
Airship mechanism, Captive
V. C. de Ybarrondo
Ammoninm salts from gas, Ohtaining
K. Burkheiser

Amnsement apparatus
Animal trapR. E. Riday Asbestos moldG. H. Brahrook
Ash can or barrel M. Froese Automatic alarm E. G. Halvorsen
Automobiles and like machines, Starting device for R. D. Stryker
Automobiles, Safety brake and lock-switch mechanism for electricO. P. Fritchie
BadgeH. Hesselbarth Bag holderC. L. Eastham
Baling press U. F. Lueblen Baling press C. E. Wehrenberg Bandage, Ear K. Berthel
Barium chlorid and stontium chlorid for producing chlorin and hydroxid of the
said metals, TreatingA. Clemm Barrel sanding apparatus
Barrel, Sheet metal H. W. Avery et al. Bearing, antifriction E. C. Chatham
Bed L. E. Frye Bed hottom H. D. Sweinhagen
Bed frame constructionF. I. Gould Beds, Folding crih attachment for
Amnsement apparatus W. P. Chamherlain, Jr. Animal trap. R. E. Riday Asbestos mold. G. H. Brahrook Ash can or barrel. M. Froese Automatic alarun. E. G. Halvorsen Automobile. J. B. Bartholomew Automobiles and like machines, Starting device for. R. D. Stryker Automohiles, Safety brake and lock-switch mechanism for electric. O. P. Fritchie Badge. H. Hesselbarth Bag holder. C. L. Eastham Baling press. U. F. Luebhen Baling press. U. F. Luebhen Baling press. C. E. Wehrenberg Bandage, Ear. K. Berthel Barium chlorid and stontium chlorid for prodneing chlorin and hydroxid of the said metals, Treating. A. Clemm Barrel sanding apparatus. H. F. Marten et al. Barrel, Sheet metal. H. W. Avery et al. Bearing, antifriction. E. C. Chathan Bed. L. E. Fryc Bed hottom. H. D. Sweinhagen Bed frame construction. F. I. Gould Beds, Folding crih attachment for T. R. Kemper Beer carhonating device. N. Ludwig Beer filtration, Equalizing device for F. Turek Beet flume cover. J. R. Lees Belt stretcher. C. Cyr Belt support and shifter, Driving R. W. Walker Bending machine. J. H. Kimhell Bicycle shock absorbing attachment
Beet flume cover J. R. Lees
Belt support and shifter, DrivingR. W. Walker
Bending machine. J. H. Kimhell Bicycle fork. J. Schmidt Bicycle shock ahsorbing attachment. C. A. Redmond Bin. F. J. McMenamin Binder, Temporary (2 pats.). L. M. Morden et al. Binders and the like, Seal lock for loose-leaf. A. H. Chadwick Biscuit cutter. J. Hartmann
Bicycle shock absorbing attachment
Binder, Temporary (2 pats.). L. M. Morden et al.
Binders and the like, Seal lock for loose-leafA. H. Chadwick
Biscuit cutter. J. Hartmann Biscuits, Manufacture of cup, cornet, and like. T. O. Ratas
Blower and exhauster, Rotary. T. W. Green Boat apparatus, Life A. Brun
Boat equipped with submerging-planes, Submarine L. Y. Spear
Binders and the like, Seal lock for loose-leaf
Boilers and the like, Rack for
Book, Check
for closingL. J. M. Delaveau Boring machineJ. W. Ogle
Bottle brushing machineJ. W. Dawson Bottle for adhesive liquidsN. C. Phillips
Bottles, Non-remiableE. B. Barner Bottles, &c., Screw closure forA. Wilzin BoxJ. Torango
Dalle nice and training training C. 11. Anderson
Brake shoe machine
Brake shoes, Making. F. K. Caswell
Brake systems, Crossover connections for fluid pressureJ. A. Hicks Briek press off bearing attachment
Bridle hit
Brooder J. A. Connolly Brooder N. D. Ford
Brush holder, ToothE. L. Smith Buckle for bale tiesD. E. Eddleman et al.
Buffing and polishing machine
Building machineA. B. Fowler Building block mold Hollow
Calcium cyanamid powder, Granulating
commercial
Can lock, Milk
Canning deviceN. Barrett Cane loader, SugarT. J. Howard Can bedy continued by P. McKenner
Brick press off bearing attachment
Car door, FreightJ. Wirkns Car, Dump (3 pats.)G. A. Rakowsky
Car indicatorW. D. Baldwin et al. Car life guard, RailwayW. Torrens
Car lock, DumpA. C. Stansill et al. Car roller side hearing, Railway
Car steps, Means for operating.
Car ventilating device, Sleeping. E. Davis Carburcter P. Daniel
Carousel C. Figge et al Carriage Cableway S. A. Cooney Carriage Automatic during devices for
Car brakeI. D. Morrison et al. Car door fastenerJ. J. Acker Car door, FreightJ. Wirkns Car, Dump (3 pats.)G. A. Rakowsky Car grain doorE. E. A. Martin Car indicatorW. D. Baldwin et al. Car life guard, RailwayW. Torrens Car lock, DnmpA. C. Stansill et al. Car roller side hearing, Railway J. F. O'Counor Car steps, Means for operating Car ventilating device, Sleeping. E. Davis CarburcterP. Daniel CaronselC. Figge et al Carriage CablewayS. A. Cooney Carriers, Automatic dumping device for elevatedJ. D. Austin Caster, FurnitureB. P. Kenyon Castings, Manufacturing hollowW. Kurze Centrifugal machineG. ter Meer
Castings, Manufacturing hollow, W. Kurze Centrifugal machine
Centrifugal machine
Channel ribbon, Making. J. D. Wilson Chimney cap. J. C. Rothbarth Chimneys and for obtaining deaft with bad
chilineys, Device for increasing the diare
of
Chlorhydrins and making same
Cigar holder
Circuit closer for electromagnetic apparatus, Thermic

1 fie	114	V E/I	. •
Clasp (2 pats.)A. Clasp or bnckleClay screen.	T. Va 3. P.	n Alstyr Spanglei	1
Clay screen. Clevis. Closet seat buffer attachment Clothes line reel.	.J. A. M. J.	Lawlor Cassidy C. Cleis	
Clothes line reel	<u>.</u> D.	F. Eiche Holden M. Foss	1
Clothes line reel. Cluster socket Clitch brake. Cock attachment, BathE. Cock, Gage. Coffee pot Coil	D. s J. V	nodgrass 7. Scaife	,
Coil	к. г Voegt J. H.	Kamey :le et al. McBride	
Coin selectorG. C Coke ovens, Operating retort. Collar and cuff folding mach	. Reit .A. F	h et al. Hilleke L Recce	
Collar and cuff folding mach Collar attachment for harness Comb	S N. A	. Nissen	
tecting separation of matri	ces an	d space-	
bars in typographical Composition of matterE. Computing device Concrete block machine	E. B S. M J. S	lackman . Boling . Minton	
Concrete construction, Meta	allie 1 . A. V	einforce Vedmore	
Concrete block machine Concrete construction, Mets for	J. J.	B. Blaw B. Blaw	
Conveyer	D. S Cun	eeberger njugham	
Cooling tower	E. A. J '. H. J	Burhorn I. Burns Hamrick	
Corset steels and bones, Shie	ld for G. T. W	L. Bard Felton	
Cotton chopper	J. F.	I. Paris Appleby	
Crane, Horn	. A. s.	Marten Rockwell	
Crusher mill	J. J.	Williams . Loftin Luttrell	
Cultivator attachment Cultivator fender Current machines. Rotor for I	F. A .G. M	. Reese . Foster	
alternating.	A. F. F	E. Guy I. Crago	
Curtain, Berth	. vest 3. T. C. I	ar et ar. Crandell C. Hicks	
Cuspidor Cutting apparatus Cycles, Be't tightener for r	C. G J. G notor.	erencier nzowski	
Dental apparatus. J	. W. S. [. C. (Harley Corcoran Corcoran	
Derrick	V. Е. Е.	J. Hill Waring	
Corn popper. F. Corset steels and bones, Shie Cotton-chopper. Cotton chopper. Cotton picking machine. Conch. Suspension. J. Crane, Horn. Crate, Collapsible. B. Crusher mill. Crutch, Adjustable. Cultivator attachment. V. Chitvator attachment. Cultivator fender. Current machines, Rotor for I alternating. Current motor. A curtain, Berth. Curtain stretcher. Curtain stretcher. Curtain stretcher. Cuspidor. Cutting apparatus. Cycles. Be't tightener for motor of the curtain apparatus. J. Denture. J. Denture. J. Denture. J. Denture. J. Denture. J. Desk. Dilator. Dish washer and holder, Co. Ditch gate. Door bolt, Show case.	mbine M. Rig	d	
Door bolt, Show case	A A. Vai F. J	I. Collar uderveld . Smith	
Door lock, Locker Douche apparatns, Breast Draft gearing	.D. (A. ? H. I	'hurchill Mantelet L. Miller	
Ditch gate Door bolt, Show case. Door lock, Door lock, Locker. Douche apparatus, Breast. Draft gearing. Drafting instrument, Combin Drain pipe inlet. Drain tile outlet. Drainer for cellars, &c., Au Dress suit rack, Drill gage plate. Drill press table.	ation.	Smith	
Drain tile outlet	J. Fit itomat	zpatrick	
Dress suit rack. Drill gage plate.	S. B. E.	Weaver Seaver	
Drill press table	. A. G . Y. V	, Smith , Sheak Villiams	
Dye. Yellow Dyeing machine Educational and amusement	.P. Vo R. H. device	olkmann Comey	
Drill gage plate. Drill press table. Drinking cup. Dust guard (2 pats.)L Dye. Yellow. Dyeing machine. Educational and amusement Electric heater. Electric machine brush holde	.С. Е Н. С.	. Fisher Walter	
Electric machine, Dynamo Electric machines, Rotary fie	. A. E.	Balcome Search	
Talentuin emitude II II are	······································	d. Gray	
Electrolytic decomposition of	solut P. To .G. H	ions ownsend [. Rowe	-
Electric switch E. K. Mac Electrolytic decomposition of C. Electromechanical device Elevator door lock A Ellipsograph Embalmer's injecting and asprains	. W. T	Hnbers '. Jeter]
ratus	I .J. W	3. Leon Illmann]
Evaporating apparatus Excavator, RotaryE. M	. S. X War	I. Lillie renfeltz]
Embalmer's injecting and asyratus Emulsifier Envelop opener Evaporating apparatus. Excavator, Rotary. E. M Excavator, Side delivery. C Explosion engine Explosive liquids, Storage tank Eyeglass mounting Fare register, Recording.	.W. A k for.	Jones .]
Eyeglass mounting Fare register, Recording Fastener, SeparableL.	L. L. A. E	Kessler F. Adt L. Stone)
Fastener, SeparableL. FaucetH. G. (Faucet Feed apparatus, Measured	K. Hi Cordle: F.	rshberg y et al. Parker	Ī
Feed apparatus, Measured Feed water heater and puri	W. B.	Bolles	j
Feed application, Measured	rescot	t et al. Parker	I I
Fibrous materials, Apparatus Filaments for illuminating and	for fe E. M.	Fraham Iting Knight	I
poses. Manufacture ofG	Michai	id et al.	I
Filing appliance	Wood	1 et al.	I
Filling fork protector. E. S. Filling replenishing mechanism Fire alarmJ. E. W. Fire door opener. Fire extinguisher, Automatic Fire extinguisher nozzle. A Fish hook. Fish hook, Automatic. Fish hook, Automatic.	Fogal	et al. C. King	I
Fire extinguisher nozzleA	. C. . A. <i>E</i>	Aszman Agaard	I
rish nook, Automatic	J. J	. Lasch	I

Flood and feed gate
Fluid pressnre governor
Flood and feed gate
Folding table. F. Schmidtmann Fruit case. J. A. Hilliker
Fruit pickerH. L. Mosier Fruit standC. Muller et al.
Furnace for refnse destructors
Fuse, Electric. E. I. Barricklow Fuse, Electrical A. West
Garbage receptacle. J. P. Urban Garment H. C. Johnson
Garment. C. S. Horwood Garment, Combination. O. M. Potterf
Garment supporterP. J. Eklund Gas burnerR. C. Hawk Gas burner. Solf lighting
Gas engineJ. R. Stauton et al. Gas engineJ. M. Kroyer
Gas generating apparatus, Acetylene
Gas iguiter and safety device. Antomatic E. E. Gerald
Gas, Producing. E. G. Jewett Gas regulator. A. E. Westburg
Gasoline strainerJ. B. Richards et al. Gear cutting machineW. F. Zimmermann
Gearing, Changeable speedW. L. Miller Gearing, DrivingR. H. Gilbert
Glass drawing machine, Sheet
Glass holder E. A. Strause Grain, Cleaning
Grate bar. A Wilderspin Grille, Window R. A. W. Fox
Grinder and buffer, KnifeN. Peterson HacksawA. H. Hoffman
Hair pmC. C. Clark Hame draft linkJ. D. Brainard Hammer PueumaticF. \ Otto
Handling mechanism. Material
Harrow draw har, Hinged T. S. Moffett
Gearing, Changeable speed, W. L. Miller Gearing, Driving. R. H. Gilbert Gem setting. J. S. Brant Glass drawing machine, Sheet. Glass drawing machine, Sheet. L. W. Colburn E. A. Strause Grain, Cleaning. N. Zimmer Grappling hook. F. M. Bell Grate bar. A. Wilderspin Grille, Window. R. A. W. Fox Grinder and buffer, Knife. N. Peterson Hacksaw. A. H. Hoffman Hair pin. C. C. Clark Hammer, Pneumatic. F. A. Otto Handling mechanism, Material. Harness T. S. Moffett Harrow draw har, Hinged. Harvest machine. Potato. J. O. Thorsen Hat holder. M. P. Comean et al. Hay rakes and loaders conpling. W. R. Everitt Hay rakes and loaders. Conveyer device for W. R. Everitt Head and hack rost, Adjustable. Heat engine, Fluid pressure. J. Molas
Hay rakes and loaders, Conveyer device
for W. R. Everitt Head and hack rest, Adjustable
Heat regulator I H Surridge
Heater
Heddle frame. J. S. Forbes G. Nuttall
Heddle frame. G. Nuttall Heel, Elastic. H. R. Foster et al. Hemmer guide. V. H. Canham Hinge, Gable door E. A. Schaal
Heddle frame. G. Nuttall Heel, Elastic. H. R. Foster et al. Hemmer guide. V. H. Canham Hinge, Gable door E. A. Schaal Hoisting engine. J. W. Freeman Holdfast device. O. Fonner
Heddle frame G. Nuttall Heed, Elastic H. R. Foster et al. Hemmer guide Y. H. Canham Hinge, Gable door E. A. Schaal Hoisting engine J. W. Freeman Holdfast device O. Fonner Hoof parer E. R. Langford Hoof trimmer N. R. Polk Hopper, Filling-replenishing E. S. Wood
Heddle frame G. Nuttall Heed. Elastic H. R. Foster et al. Hemmer guide V. H. Canham Hinge Gable door E. A. Schanl Hoisting engine J. W. Freeman Holdfast device O. Fonner Hoof parer E. R. Langford Hoof trimmer N. R. Polk Hopper, Filling-replenishing E. S. Wood Hose coupling J. L. Creveling Hose reel and spray.
Heddle frame G. Nuttall Heel, Elastic H. R. Foster et al. Hemmer guide V. H. Canham Hinge, Gable door E. A. Schaal Hoisting engine J. W. Freeman Holdfast device O. Fonner Hoof parer E. R. Langford Hoof trimmer N. R. Polk Hopper, Filling-replenishing E. S. Wood Hose conpling J. L. Creveling Hose reel and spray Water W. H. Merithew Hydranlic motor P. Andersen
Heddle frame G. Nuttall Heel, Elastic H. R. Foster et al. Hemmer guide V. H. Canham Hinge, Gable door E. A. Schaal Hoisting engine J. W. Freeman Holdfast device O. Fonner Hoof parer E. R. Langford Hoof trimmer N. R. Polk Hopper, Filling-replenishing E. S. Wood Hose conpling J. L. Creveling Hose reel and spray Water W. H. Merithew Hydranlic motor P. Andersen
Heddle frame G. Nuttall Heel, Elastic H. R. Foster et al. Hemmer guide V. H. Canham Hinge, Gable door E. A. Schaal Hoisting engine J. W. Freeman Holdfast device O. Fonner Hoof parer E. R. Langford Hoof trimmer N. R. Polk Hopper, Filling-replenishing E. S. Wood Hose conpling J. L. Creveling Hose reel and spray Water W. H. Merithew Hydranlic motor P. Andersen
Heddle frame G. Nuttall Heel, Elastic H. R. Foster et al. Hemmer guide V. H. Canham Hinge, Gable door E. A. Schaal Hoisting engine J. W. Freeman Holdfast device O. Fonner Hoof parer E. R. Langford Hoof trimmer N. R. Polk Hopper, Filling-replenishing E. S. Wood Hose conpling J. L. Creveling Hose reel and spray Water W. H. Merithew Hydranlic motor P. Andersen
Heddle frame G. Nuttall Heel, Elastic H. R. Foster et al. Hemmer guide V. H. Canham Hinge, Gable door E. A. Schaal Hoisting engine J. W. Freeman Holdfast device O. Fonner Hoof parer E. R. Langford Hoof trimmer N. R. Polk Hopper, Filling-replenishing E. S. Wood Hose conpling J. L. Creveling Hose reel and spray Water W. H. Merithew Hydranlic motor P. Andersen
Heddle frame G. Nuttall Heed. Elastic H. R. Foster et al. Hemmer guide V. H. Canham Hinge. Gable door E. A. Schaal Holsting engine J. W. Freeman Holdfast device O. Fonner Hoof parer E. R. Langford Hoof trimmer N. R. Polk Hopper, Filling-replenishing E. S. Wood Hose conpling J. L. Creveling Hose reel and spray Water W. H. Merithew Hydranlic motor P. Andersen Hydranlic motor I. C. Walker Ice box T. J. Elder Ice making apparatus J. R. Howe Illuminating device and reflector J. Taussig Illusion apparatns C. E. A. Merrow Incinerating furnace (2 pats.) Incinerating furnace (2 pats.) Incinerating and recording device (Reissno) G. F. Boyer Indicating and recording device (Reissno)
Heddle frame G. Nuttall Heed. Elastic H. R. Foster et al. Hemmer guide V. H. Canham Hinge. Gable door E. A. Schaal Holsting engine J. W. Freeman Holdfast device O. Fonner Hoof parer E. R. Langford Hoof trimmer N. R. Polk Hopper, Filling-replenishing E. S. Wood Hose conpling J. L. Creveling Hose reel and spray Water W. H. Merithew Hydranlic motor P. Andersen Hydranlic motor I. C. Walker Ice box T. J. Elder Ice making apparatus J. R. Howe Illuminating device and reflector J. Taussig Illusion apparatns C. E. A. Merrow Incinerating furnace (2 pats.) Incinerating furnace (2 pats.) Incinerating and recording device (Reissno) G. F. Boyer Indicating and recording device (Reissno)
Heddle frame G. Nuttall Heed. Elastic H. R. Foster et al. Hemmer guide V. H. Canham Hinge. Gable door E. A. Schaal Holsting engine J. W. Freeman Holdfast device O. Fonner Hoof parer E. R. Langford Hoof trimmer N. R. Polk Hopper, Filling-replenishing E. S. Wood Hose conpling J. L. Creveling Hose reel and spray Water W. H. Merithew Hydranlic motor P. Andersen Hydranlic motor I. C. Walker Ice box T. J. Elder Ice making apparatus J. R. Howe Illuminating device and reflector J. Taussig Illusion apparatns C. E. A. Merrow Incinerating furnace (2 pats.) Incinerating furnace (2 pats.) Incinerating and recording device (Reissno) G. F. Boyer Indicating and recording device (Reissno)
Heddle frame G. Nuttall Heed. Elastic H. R. Foster et al. Hemmer guide V. H. Canham Hinge. Gable door E. A. Schaal Holsting engine J. W. Freeman Holdfast device O. Fonner Hoof parer E. R. Langford Hoof trimmer N. R. Polk Hopper, Filling-replenishing E. S. Wood Hose conpling J. L. Creveling Hose reel and spray Water W. H. Merithew Hydranlic motor P. Andersen Hydranlic motor I. C. Walker Ice box T. J. Elder Ice making apparatus J. R. Howe Illuminating device and reflector J. Taussig Illusion apparatns C. E. A. Merrow Incinerating furnace (2 pats.) Incinerating furnace (2 pats.) Incinerating and recording device (Reissno) G. F. Boyer Indicating and recording device (Reissno)
Heddle frame G. Nuttall Heed. Elastic H. R. Foster et al. Hemmer guide V. H. Canham Hinge. Gable door E. A. Schaal Holsting engine J. W. Freeman Holdfast device O. Fonner Hoof parer E. R. Langford Hoof trimmer N. R. Polk Hopper, Filling-replenishing E. S. Wood Hose conpling J. L. Creveling Hose reel and spray Water W. H. Merithew Hydranlic motor P. Andersen Hydranlic motor I. C. Walker Ice box T. J. Elder Ice making apparatus J. R. Howe Illuminating device and reflector J. Taussig Illusion apparatns C. E. A. Merrow Incinerating furnace (2 pats.) Incinerating furnace (2 pats.) Incinerating and recording device (Reissno) G. F. Boyer Indicating and recording device (Reissno)
Heddle frame G. Nuttall Heed. Elastic H. R. Foster et al. Hemmer guide V. H. Canham Hinge. Gable door E. A. Schaal Holsting engine J. W. Freeman Holdfast device O. Fonner Hoof parer E. R. Langford Hoof trimmer N. R. Polk Hopper, Filling-replenishing E. S. Wood Hose conpling J. L. Creveling Hose reel and spray Water W. H. Merithew Hydranlic motor P. Andersen Hydranlic motor I. C. Walker Ice box T. J. Elder Ice making apparatus J. R. Howe Illuminating device and reflector J. Taussig Illusion apparatns C. E. A. Merrow Incinerating furnace (2 pats.) Incinerating furnace (2 pats.) Incinerating and recording device (Reissno) G. F. Boyer Indicating and recording device (Reissno)
Heddle frame G. Nuttall Heed. Elastic H. R. Foster et al. Hemmer guide V. H. Canham Hinge. Gable door E. A. Schaal Holsting engine J. W. Freeman Holdfast device O. Fonner Hoof parer E. R. Langford Hoof trimmer N. R. Polk Hopper, Filling-replenishing E. S. Wood Hose conpling J. L. Creveling Hose reel and spray Water W. H. Merithew Hydranlic motor P. Andersen Hydranlic motor I. C. Walker Ice box T. J. Elder Ice making apparatus J. R. Howe Illuminating device and reflector J. Taussig Illusion apparatns C. E. A. Merrow Incinerating furnace (2 pats.) Incinerating furnace (2 pats.) Incinerating and recording device (Reissno) G. F. Boyer Indicating and recording device (Reissno)
Heddle frame G. Nuttall Heed. Elastic H. R. Foster et al. Hemmer guide V. H. Canham Hinge. Gable door E. A. Schaal Holsting engine J. W. Freeman Holdfast device O. Fonner Hoof parer E. R. Langford Hoof trimmer N. R. Polk Hopper, Filling-replenishing E. S. Wood Hose coupling J. L. Creveling Hose reel and spray Water W. H. Merithew Hydranlic motor P. Andersen Hydranlic motor I. C. Walker Ice box T. J. Elder Ice box T. J. Elder Ice making apparatus J. B. Howe Illuminating device and reflector Illuminating device and reflector Incinerating furnace (2 pats.) F. L. Stearns Inchbators Egg-thrning tray for Indicating and recording device (Reissue). F. A. Morgan Indicating switch R. C. Browne Insulated hanger E. R. Melton Insulated hanger E. R. Melton Insulated hanger E. R. Melton Insulated hanger E. Crabbe Insulator J. H. Campbell Internal combustion engine C. W. Foster Internal combustion engine M. L. Williams Internal combustion engine C. H. Sergeant Internal combustion engine C. E. Fogg
Heddle frame G. Nuttall Heed. Elastic H. R. Foster et al. Hemmer guide V. H. Canham Hinge. Gable door E. A. Schaal Holsting engine J. W. Freeman Holdfast device O. Fonner Hoof parer E. R. Langford Hoof trimmer N. R. Polk Hopper, Filling-replenishing E. S. Wood Hose coupling J. L. Creveling Hose reel and spray Water W. H. Merithew Hydranlic motor P. Andersen Hydranlic motor I. C. Walker Ice box T. J. Elder Ice box T. J. Elder Ice making apparatus J. B. Howe Illuminating device and reflector Illuminating device and reflector Incinerating furnace (2 pats.) F. L. Stearns Inchbators Egg-thrning tray for Indicating and recording device (Reissue). F. A. Morgan Indicating switch R. C. Browne Insulated hanger E. R. Melton Insulated hanger E. R. Melton Insulated hanger E. R. Melton Insulated hanger E. Crabbe Insulator J. H. Campbell Internal combustion engine C. W. Foster Internal combustion engine M. L. Williams Internal combustion engine C. H. Sergeant Internal combustion engine C. E. Fogg
Heddle frame G. Nuttall Heed. Elastic H. R. Foster et al. Hemmer guide V. H. Canham Hinge. Gable door E. A. Schaal Holsting engine J. W. Freeman Holdfast device O. Fonner Hoof parer E. R. Langford Hoof trimmer N. R. Polk Hopper, Filling-replenishing E. S. Wood Hose coupling J. L. Creveling Hose reel and spray Water W. H. Merithew Hydranlic motor P. Andersen Hydranlic motor I. C. Walker Ice box T. J. Elder Ice box T. J. Elder Ice making apparatus J. B. Howe Illuminating device and reflector Illuminating device and reflector Incinerating furnace (2 pats.) F. L. Stearns Inchbators Egg-thrning tray for Indicating and recording device (Reissue). F. A. Morgan Indicating switch R. C. Browne Insulated hanger E. R. Melton Insulated hanger E. R. Melton Insulated hanger E. R. Melton Insulated hanger E. Crabbe Insulator J. H. Campbell Internal combustion engine C. W. Foster Internal combustion engine M. L. Williams Internal combustion engine C. H. Sergeant Internal combustion engine C. E. Fogg
Heddle frame G. Nuttall Heed. Elastic H. R. Foster et al. Hemmer guide V. H. Canham Hinge. Gable door E. A. Schaal Holsting engine J. W. Freeman Holdfast device O. Fonner Hoof parer E. R. Langford Hoof trimmer N. R. Polk Hopper, Filling-replenishing E. S. Wood Hose coupling J. L. Creveling Hose reel and spray Water W. H. Merithew Hydranlic motor P. Andersen Hydranlic motor I. C. Walker Ice box T. J. Elder Ice box T. J. Elder Ice making apparatus J. B. Howe Illuminating device and reflector Illuminating device and reflector Incinerating furnace (2 pats.) F. L. Stearns Inchbators Egg-thrning tray for Indicating and recording device (Reissue). F. A. Morgan Indicating switch R. C. Browne Insulated hanger E. R. Melton Insulated hanger E. R. Melton Insulated hanger E. R. Melton Insulated hanger E. Crabbe Insulator J. H. Campbell Internal combustion engine C. W. Foster Internal combustion engine M. L. Williams Internal combustion engine C. H. Sergeant Internal combustion engine C. E. Fogg
Heddle frame G. Nuttall Heel. Elastic H. R. Foster et al. Hemmer guide V. H. Canham Hinge, Gable door E. A. Schaal Holsting engine J. W. Freeman Holdfast device O. Fonner Hoof parer E. R. Langford Hoof trimmer N. R. Polk Hopper, Filling-replenishing E. S. Wood Hose coupling J. L. Creveling Hose reel and spray Water W. H. Merithew Hydranlic motor P. Andersen Hydranlic motor I. C. Walker Ice box T. J. Elder Ice making apparatus J. B. Howe Illuminating device and reflector Incandescent mantles, Producing Illusion apparatus C. E. A. Merrow Incandescent mantles, Producing Incinerating furnace (2 pats.) F. L. Stearns Inchators, Egg-turning tray for Indicating and recording device (Reissne). Inking roller cooling apparatus Insulated hanger E. Crabbe Insulated hanger E. Crabbe Insulating system for high potential electric conductors F. M. Locke Insulator U. J. H. Campbell Internal combustion engine C. W. Foster Internal combustion engine M. L. Williams Internal combustion engine E. O. Freund Joint fastener and tightener J. W. Staples Knitting machine, Automatic rib. Internal combustion engine E. O. Freund Joint fastener and tightener J. W. Staples Knitting machine, Automatic rib. Internal combustion engine C. E. Fogg Internal combustion engine F. D. Rettich Ladpe G. Keller Lamp G. G. Keller Lamp G. J. Salch Lamp Darcket C. G. Thunen et al.
Heddle frame G. Nuttall Heel. Elastic H. R. Foster et al. Hemmer guide V. H. Canham Hinge, Gable door E. A. Schaal Holsting engine J. W. Freeman Holdfast device O. Fonner Hoof parer E. R. Langford Hoof trimmer N. R. Polk Hopper, Filling-replenishing E. S. Wood Hose coupling J. L. Creveling Hose reel and spray Water W. H. Merithew Hydranlic motor P. Andersen Hydranlic motor I. C. Walker Ice box T. J. Elder Ice making apparatus J. B. Howe Illuminating device and reflector Incandescent mantles, Producing Illusion apparatus C. E. A. Merrow Incandescent mantles, Producing Incinerating furnace (2 pats.) F. L. Stearns Inchators, Egg-turning tray for Indicating and recording device (Reissne). Inking roller cooling apparatus Insulated hanger E. Crabbe Insulated hanger E. Crabbe Insulating system for high potential electric conductors F. M. Locke Insulator U. J. H. Campbell Internal combustion engine C. W. Foster Internal combustion engine M. L. Williams Internal combustion engine E. O. Freund Joint fastener and tightener J. W. Staples Knitting machine, Automatic rib. Internal combustion engine E. O. Freund Joint fastener and tightener J. W. Staples Knitting machine, Automatic rib. Internal combustion engine C. E. Fogg Internal combustion engine F. D. Rettich Ladpe G. Keller Lamp G. G. Keller Lamp G. J. Salch Lamp Darcket C. G. Thunen et al.
Heddle frame G. Nuttall Heel. Elastic H. R. Foster et al. Hemmer guide V. H. Canham Hinge, Gable door E. A. Schaal Holsting engine J. W. Freeman Holdfast device O. Fonner Hoof parer E. R. Langford Hoof trimmer N. R. Polk Hopper, Filling-replenishing E. S. Wood Hose coupling J. L. Creveling Hose reel and spray Water W. H. Merithew Hydranlic motor P. Andersen Hydranlic motor I. C. Walker Ice box T. J. Elder Ice making apparatus J. B. Howe Illuminating device and reflector Incandescent mantles, Producing Illusion apparatus C. E. A. Merrow Incandescent mantles, Producing Incinerating furnace (2 pats.) F. L. Stearns Inchators, Egg-turning tray for Indicating and recording device (Reissne). Inking roller cooling apparatus Insulated hanger E. Crabbe Insulated hanger E. Crabbe Insulating system for high potential electric conductors F. M. Locke Insulator U. J. H. Campbell Internal combustion engine C. W. Foster Internal combustion engine M. L. Williams Internal combustion engine E. O. Freund Joint fastener and tightener J. W. Staples Knitting machine, Automatic rib. Internal combustion engine E. O. Freund Joint fastener and tightener J. W. Staples Knitting machine, Automatic rib. Internal combustion engine C. E. Fogg Internal combustion engine F. D. Rettich Ladpe G. Keller Lamp G. G. Keller Lamp G. J. Salch Lamp Darcket C. G. Thunen et al.
Heddle frame G. Nuttall Heed. Elastic H. R. Foster et al. Hemmer guide V. H. Canham Hinge. Gable door E. A. Schaal Holsting engine J. W. Freeman Holdfast device O. Fonner Hoof parer E. R. Langford Hoof trimmer N. R. Polk Hopper, Filling-replenishing E. S. Wood Hose coupling J. L. Creveling Hose reel and spray Water W. H. Merithew Hydranlic motor P. Andersen Hydranlic motor I. C. Walker Ice box T. J. Elder Ice box T. J. Elder Ice making apparatus J. B. Howe Illuminating device and reflector Illuminating device and reflector Incinerating furnace (2 pats.) F. L. Stearns Inchbators Egg-thrning tray for Indicating and recording device (Reissue). F. A. Morgan Indicating switch R. C. Browne Insulated hanger E. R. Melton Insulated hanger E. R. Melton Insulated hanger E. R. Melton Insulated hanger E. Crabbe Insulator J. H. Campbell Internal combustion engine C. W. Foster Internal combustion engine M. L. Williams Internal combustion engine C. H. Sergeant Internal combustion engine C. E. Fogg

Clasp (2 pats.)A. T. Van Alstyn Clasp or bnckleG. P. Spangler	Flood and feed gateA. J. Collar Fluid pressnre governor	Letter, Electric sign1'. H. Lausdell LevelA. D. Hunsicker et al
Clay screen. J. A. Lawlor Clevis. M. Cassidy Closet seat buffer attachment. J. C. Cleis		Level and folding rule, Combination spirit. R. G. Pike Lifting barrels, boxes, and the like, Col-
Clothes line reelF. Eiche Cluster socketD. Holden	Folding tableF. Schmidtmann Fruit caseJ. A. Hilliker	lapsible stand for J. B. James Linotype machine W. E. Elliott
Clntch brakeC. M. Foss Cock attachment, BathE. D. Snodgrass Cock, GageJ. V. Scaife	Fruit picker. H. L. Mosier Fruit stand. C. Muller et al. Furnace H. Hans	Liquid fuel burner
Coffee pot. R. L. Ramey Coil A. Voegtle et al.	Furnace for refnse destructors	Lock. C. E. Johnson Lock. F. T. Purdham Lock strike. F. Liers
Coin controlled apparatnsJ. H. McBride Coin selectorG. C. Reith et al.	Fuse, Electric. E. I. Barricklow Fuse, Electrical . A. West	Locomotive furnace, Oil burning
Coke ovens, Operating retortA. F. Hilleke Collar and cuff folding machineG. Recce Collar attachment for harnessN. A. Nissen	Game apparatusG. D. Suell Garbage receptacleJ. P. Urban GarmentH. G. Johnson	Log turning deviceV. T. Grabs
Comb	Garment	Logging systemJ. H. Dickinson et al. Loom, Antomatic weft-replenishing.
fecting separation of matrices and space- bars in typographicalC. Muchleisen Composition of matterE. E. Blackman	Garment supporter	Loom, Automatic weft-replenishing
Concrete block machineJ. S. Minton	Gas burner, Self-lightingJ. R. Stauton et al. Gas engineJ. M. Kroyer	Loom, Filling-replenishing, J. Northrop Loom, Filling replenishing, W. F. Draper
Concrete construction, Metallic reinforce for	Gas generating apparatus, Acetylene S. F. Hodges et al.	Loom filling-replenishing mechanism J. Northrop
Concrete retaining wallJ. B. Blaw	Gas generator, AcetyleneW. W. Harris Gas iguiter and safety device, Antomatic E. E. Gerald	Loom harness mechanismI. S. Barbank Loom let-off mechanismJ. V. Cunniff Loom picker check strap holder
Conveyer	Gas, ProducingE. G. Jewett Gas regulatorA. E. Westburg	Loom thin place preventerJ. Northrop
Couveying systemW. R. Cunniugham Cooling towerE. Burhorn Coring machine, FruitA. J. Burns	Gas scrubberE. F. Loyd Gasoline strainerJ. B. Richards et al. Gear cutting machineW. F. Zimmermann	Loom, Weft-replenishing. J. G. Kin- Loom, Weft-replenishing.
Corn popperF. H. Hamrick Corset steels and bones, Shield for	Gearing, Changeable speedW. L. Miller Gearing, DrivingR. H. Gilbert	Locm weft-supplying mechanismE. S. Stimpson
G. L. Bard Cotton-chopper T. W. Felton Cotton chopper H. M. Paris	Gem settingJ. S. Brant Glass drawing machine, Sheet	Looms, cloth beam forJ. Northrop Looms. Filling-supplying mechanism for
Cotton picking machine J. F. Appleby Coach, Suspension J. B. Patterson	Glass holder E. A. Strause Grain, Cleaning. N. Zimmer	automatic filling-replenishing
Crane, HornA. S. Marten Crate, CollapsibleB. C. Rockwell	Grappling hookF. M. Bell Grate barA. Wilderspin	plenishing
Crusher mill	Grille, WindowR. A. W. Fox Grinder and buffer, KnifeN. Peterson	Mail chute)2 pats.)A. K. Smith Mail crane und cutcherJ. A. Timmerman
Cultivator attachmentF. A. Reese Cultivator fenderG. M. Foster	Hacksaw	Mail receiving deviceM. A. Candle Mainspring winderT. W. Hobb et al.
Current machines, Rotor for high frequency alternating	Hammer, PneumaticF. A. Otto Handling mechanism, Material	Manicure instrumentE. Ruettgers Manifolding padE. K. Bottle
Current motor. F. H. Crago Current motor. A. Vestal et al. Curtain, Berth G. T. Crandell	Harness Hinged T. S. Moffett	Manifolding pad
Curtain stretcherC. K. Hicks CuspidorC. Gerencier	Harvest machine, PotatoJ. O. Thorsen	Match boxE. Poepel Match safe and cigar cutter, Combined
Cutting apparatusJ. Gnzowski Cycles. Be't tightener for motor W. S. Harley	Hat holderM. P. Comean et al. Hay rake and loader coupling	Measuring instrument, Compound. M. Clarke
Dental apparatusJ. C. Corcoran DentureJ. C. Corcoran	Hay rakes and loaders, Conveyer device for	Measuring instrument, Electrical
Derrick V. J. Hill Desk E. E. Waring Dilator R. S. Arthur	Head and hack rest, Adjustable	Metal articles, Process and apparatus for cutting compoundJ. F. Monnot
Dish washer and holder, Combined N. M. Richardson	Heat engine. Fluid pressureJ. Molas Heat regulatorJ. H. Surridge HeaterT. G. Palmer	Metal hoopJ. E. Wright Metal molding crimperT. J. Williams Metal salts and metals, Producing
Ditch gateA. J. Collar Door bolt, Show caseA. Vanderveld	Heating water, milk, &c., for sterilizing or other purposes, Apparatus for	Metal shearing machine C. C. Goble
Door lock. F. J. Smith Door lock, Locker. D. Churchill Douche apparatus, Breast. A. Mantelet	J. S. Forbos Heddle frame. G. Nuttall Heel. Elastic. H. R. Foster et al.	Metallic tie and rail fastener
Draft gearing	Hemmer guideV. H. Canham Hinge, Gable doorE. A. Schaal	Mixer
Drain pipe inletW. Hoteling Drain tile outletJ. Fitzpatrick	Hoisting engineJ. W. Freeman Holdfast deviceO. Fonner Hoof parerE. R. Langford	Moistener
Drainer for cellars, &c., Automatic G. Hoffman	Hoof trimmer	Mortar feeding deviceC. E. Allred Motors. Means for improving the efficiency
Dress suit rack. S. B. Weaver Drill gage plate. E. Seavey Drill press table. L. Smith	Hose couplingJ. L. Creveling Hose reel and spray. Water	of hot-air or external combustionE. Schneider
Drinking cupA. G. Sheak Dust guard (2 pats.)L. Y. Williams	W. II. Merithew Hydranlie motor. P. Andersen Hydranlie motor. I. C. Walker	Mower attachmentL. Franzmeier Music instruction board, Key controlledA. L. Skoog
Dyeing machineR. H. Comey Educational and annisement device	Ice box	Music leaf turner. A. Hoyer Musical instrument. M. L. Severy Musical instrument monthpiece.
Electric heater	Illuminating device and reflector J. Taussig Illusion apparatusC. E. A. Merrow	Nautical instrumentC. A. McCallister
Electric machine brush holder, Dynamo H. A. Balcome Electric machine, DynamoC. E. Search	Incandescent mantles, Producing	Necktie holderE. T. Craige Nose bagH. W. Curry
Electric machines, Rotary field member of dynamo	Incinerating furnace (2 pats.)	Nut lock. J. Arrenbrecht Nut lock. J. E. Robinson Nut lock. J. K. Wedgworth
Electric switchE. K. Mackintosh et al. Electrolytic decomposition of solutions C. P. Townsend	Indicating and recording device (Reissne).	Nut lockJ. B. Wismer Nut lockF. G. Rank
Electromechanical device G. H. Rowe Elevator door lock A. W. Hubers	Indicating switch. R. C. Browne Injector G. Fusch	OarJ. Pieritz Oil shieldII. Haudenschild Optical instrumentB. F. Mayo
EllipsographT. Jeter Embalmer's injecting and aspirating appa-	Inking roller cooling apparatusE. R. Melton	Optical instrument attachment
ratus	Insulated hangerE. Crabbe Insulating system for high potential electric conductorsF. M. Locke	Ore-concentrating jig M. Doubledee Ore-jigger C. E. Knowles Oscillating motor H. A. Adams
Evaporating apparatusS. M. Lillie Excavator, RotaryE. M. Warrenfeltz	InsulatorJ. H. Campbell Internal combustion engineC. W. Foster	Painting applianceR. D. Kinyon
Excavator, Side deliveryG. W. Barnett Explosion engineW. A. Jones Explosive liquids, Storage tank for	Internal combustion engine. M. L. Williams Internal combustion engine	Pan and plate lifterW. W. Shirley Paper box covering machines, Form forC. G. Wyatt
Eyeglass mountingL. Kessler		Paper wrappers, Machine for making F. Kaufman
Fare register, RecordingA. E. Stone Fastener, SeparableL. K. Hirshberg FaucetH. G. Cordley et al.	Internal combustion engineC. E. Fogg Intestine cleaning machineE. O. Freund	Pattern or mold forming machine
Faucet	Joint fastener and tightener. J. W. Staples Knitting machine, Automatic rib H. B. Taylor	Peanut gleanerH. L. Pippen Pedal grip attachmentE. F. and H. Pawsat
Feed water heater and purifier	Knob and spindle connectionW. Curlett Label attaching meansF. D. Rettich	Pegging machineJ. F. Davey Pencil holder and inhaler, Combined
Fence postG. L. Prescott et al. Fence postW. Parker Fence. stretcher. WireC. L. Graham	LadderE. L. Boyd	PenstockJ. W. Hayes C. H. Laing
Fibrous materials, Apparatus for felting E. M. Knight	LampG. Keller LampG. J. Salch	Perfecting machine
Filaments for illuminating and heating pur-	Lamp	Perfecting machineII. Stamm Phonograph MandrelH. N. Kistner Phonographs, Automatic check for
poses, Manufacture ofG. Michaud et al. Filing appliance	LampG. J. Salch Lamp bracketC. G. Thunen et al. Lamp hurner, Alcohol vapor A. H. S. Swan Lamp, CarburetingC. Torchebeuf et al.	Perfecting machineII. Stamm Phonograph MandrelH. N. Kistner Phonographs, Automatic check forJ. J. Morrissey Phonographic shutter (2 pats)J. T. Fisk
Filing appliance	Lamp bracket G. J. Salch Lamp bracket C. G. Thunen et al. Lamp hurner, Alcohol vapor A. H. S. Swan	Perfecting machine II. Stamm Phonograph Mandrel H. N. Kistner Phonographs, Automatic check for J. J. Morrissey Phonographic shutter (2 pats) J. T. Fisk Picker sticks, Cushioning ston for
Filing applianceH. J. Hick Filling fork protectorE. S. Wood et al. Filling replenishing mechanismJ. Northrop Fire alarmJ. E. W. Fogal et al.	Lamp	Perfecting machineII. Stamm Phonograph MandrelH. N. Kistner Phonographs, Automatic check forJ. J. Morrissey Phonographic shutter (2 pats)J. T. Fisk Picker sticks. Cushioning stop forJ. Northrop PigmentA. Moffatt Pigments, MakingA. Moffatt Pins, MakingH. Wolcott
Filing appliance	Lamp	Perfecting machine
Filing applianceH. J. Hick Filling fork protectorE. S. Wood et al. Filling replenishing mechanism J. Northrop Fire alarmJ. E. W. Fogal et al. Fire door openerE. C. King Fire extinguisher, AutomaticN. Finical	Lamp	Perfecting machineII. Stamm Phonograph MandrelH. N. Kistner Phonographs, Automatic check forJ. J. Morrissey Phonographic shutter (2 pats)J. T. Fisk Picker sticks. Cushioning stop forJ. Northrop PigmentA. Moffatt Pigments. MakingA. Moffatt Pigs. MakingH. Wolcott Pipe-coils. Making longL. C. Schneider

Pneumatic cleaning apparatns
Poles or posts, Telescoping core for form-
ing plasticI. H. Tidman et al. Polishing machineH. D. Hodge
Post-snpport, AdjustableJ. E. Bond Potato cutter Seed B. Porter
Power transmitting apparatus
Preserve tin closing deviceA. Johansen
Printing machine, BlueC. F. Pease
Frinting press form support
Printing press roller bearing
Propulsion by steam turbines, Marine M. Roellig
Pulley blockS. J. and P. W. Davis et al. Pump, VacuumG. Staunton
Pump, Valveless
Punch and shear, CombinedJ. Monsos Pyroxylin &c. and making the same.
Solvent for
Rail anchorJ. A. Bodkin
Rail jointX. E. Rassico
Rail joint. S. E. Nelson
Railway switchC. C. Johnson
Railway tie J. Heinonen
Railway tie
Rectifier
Relay, ElectricalJ. F. Cadell Rendering apparatus
Resistance girdII. W. Chenev
Reversing switch, Electrical
Preserve the Gosing device. A. Johansen Preserve the Gosing device. A. Johansen Printing machine, Blue. C. F. Pease Printing press form support. G. E. Pancoast Printing press roller bearing. H. O. Atwood Propulsion by steam turbines, Marine. M. Roellig Pulley block. S. J. and P. W. Davis et al. Pump, Vacuum G. Staunton Pump, Valveless. A. Inokuty Pumping apparatus, Water. S. M. Stevens Punch and shear, Combined. J. Monsos Pyroxylin, &c., and making the same, Solvent for H. V. Walker Radiator fitting. T. G. Monat Rail joint. W. L. Buckland Rail joint. W. L. Buckland Rail joint. N. E. Rassico Rail joint. S. E. Nelson Rail splice. W. F. Rutland, Sr. Railway switch. C. C. Johnson Railway tie. J. Heinonen Railway tie. J. Heinonen Railway tie. J. Heinonen Railway tie. J. Heinonen Refrigerator wagon body. C. M. Smith Relay, Electrical. J. F. Cadeil Rendering apparatus. C. H. A. Wannenwetsch Resistance gird. H. W. Cheney Reversing switch, Electrical. J. Burge Rock-drilling bit. T. Connell Rock extractor for drill-holes. C. Desmarias Roofing, Machine for making.
Rock-drilling bitT. Connell
Rock extractor for driff-notes. C. Desmarias Roofing, Machine for making. H. R. Wardell Rotary engine. C. F. Paul, Jr. Rubber shoe. J. S. Capen Sack holder. E. F. Kandlbinder Sad iron, Gas heated. A. H. Davies Safety lock. C. A. Muller
H. R. Wardell
Rotary engine. C. F. Faul, 31. Rubber shoe J. S. Capen
Sack holderE. F. Kandbinder Sad iron, Gas heatedA. H. Davies
Safety lock
Sash lockE. L. Watrous Sash, Metallic windowE. R. Probert
Sausage twisting machine
Saw C. W. Stites Saw set A. Link
Saw, Tree-fellingE. F. Cannon Scow, Automatically-operating dumping
Sad iron, Gas heated. A. H. Davies Safety lock. C. A. Muller Sash fastener. J. H. Marsh Sash lock. E. L. Watrous Sash, Metallic window. E. R. Probert Sausage twisting machine. Saw C. W. Stites Saw et . A. Link Saw, Tree-felling. E. F. Cannon Scow, Automatically-operating dumping G. V. Mitchell Scows, Hawser-seeuring device for G. V. Mitchell Scal, Protective. T. S. Wood Sealing device, Jar. J. L. Rollins Seed, Apparatus for removing fiber from cotton. G. L. Blanchard Self-cleaning eomb. J. Haelebjian Separator and classifier. E. Major
Seal, Protective
Sealing device, JarJ. L. Rollius Seed, Apparatus for removing fiber from
cotton
Separator and classifierE. Major Service meter systemA. H. Weiss
Settling tankR. S. Lewis et al.
Sewing machineJ. E. Miller Shade bracket Adjustable J. M. Mays
Shade holder, WindowG. W. Wray
Self-cleaning comb
Sharpening and honing machine, Razor G. D. Adamson W. Whitman
Sheave
Ship. Method of and means for removing
ashes on boardE. Brouquierc Shock-absorberJ. H. Sager Shoe turning machine, Form for
Shoe turning machine, Form 101
Shuttle box. J. Northrop Shuttle positioner. J. Northrop
Signal systemR. S. Woods
Shoe turning machine, Form 107
Slitting and rewinding machine. F. Meisel Smoke house
Solution in general, Apparatus for concentratingE. Monti
Sound reproducing machines, Automatic ent-off and stop forW. G. Altenburgh
Spark plug
Speed regulating mechanismJ. C. Carpenter
Spout, Multiple tappingW. MacGregor Spring attachmentW. Bramham
Spur
Stair structure
Stalk cutter and harrowM. W. Wallace
Stacker, Theumatic. A. M. Ballis Stair structure. A. A. Griner Stairs and steps, Safety tread for A. I. Davis Stalk cutter and harrow. M. W. Wallace Stalk puller. D. M. Francisco Stanchion. R. M. Glor Stapling machine. E. H. Michener Star, bolt breaker. C. Harter et al.
Stapling machineE. H. Michener Stay-bolt breakerC. Harter et al.
Steam boiler
Steam boiler, Oil burningW. A. Rogers Stirrun, Safety, N. Crouse
Stitch machine, Impression or imitation.
Stitching machines, Presser foot mechan-
Stone cutting tool
Stove, Heating
Stapling machine. E. H. Michener Stay-bolt breaker. C. Harter et al. Steam boiler. C. A. Hammel Steam boiler, Oil burning. C. A. Hammel Steam boiler, Oil burning. W. A. Rogers Stirrup, Safety. N. Crouse Stitch machine, Impression or imitation. J. B. Hadaway Stitching machines, Presser foot mechanism for. B. H. Theisen et al. Stone cutting tool. W. F. Wittich Stop mechanism, Automatic. C. S. Batdorf Stove, Heating. G. H. Jordan Stoves, Burner for gas. R. M. Lovell Street cleaning apparatus. S. Whinery Suit, Union. S. L. Heacock
Suit, UnionS. L. Heacock

Surge tank. Pressure-regulating
Surge tank, Pressure-regulating
Swaging machineS. Z de Ferranti
Switch
Snrgeon's scissorsG. H. Peddle Swaging machineS. Z de Ferranti Swimmiug applianceD. Smith SwitchC. C. Johnsou Switch operating mechanisms, Lock for C. C. Johnson Syringe, Vaginal F. A. Neven Tag J. Praetz Tag forming and affixing machine D. P. Moore Tag forming and stitching machine E. H. Michener Tanks, Non-freezing connection for
Syringe, VagiualF. A. Neven
Tag forming and athixing machine
Tag forming and stitching machine
Tanks, Nou-freezing connection for
Tanks, Nou-freezing connection for
Tea cup F. B. Groff Telephone attachment W. C. Fisk et al. Telephone receiver holder J. F. Himes
Telephone receiver holderJ. F. Hines Telephones, Indicating means for party-
lineJ. H. Blythe Telephonic line-connecting system. Self-
actingB. Kugelmann
the for
Throw-out switchW. H. Tneker et al.
Time detector, Watchman'sII. S. Prentiss
TireI. B. Kempshall
Telephone receiver holderJ. F. Hines Telephones, Indicating means for party- lineJ. H. Blythe Telephonic line-connecting system, Self- actingB. Kugelmann Thermal regulation, Method of and appara- tns forA. G. Waterhouse Thermometer caseF. L. Ruddy Throw-out switchW. H. Tneker et al. Tile, WallF. X. Wille Time detector, Watchman'sH. S. Prentiss Timer and distributerT. H. McQuown TireL. B. Kempshall Tire, ResilientD. A. York Tire-retaining flange for wheel-rims
Tire-retaining flange for wheel-rins
Tire-smoothing apparatus, Pneumatic Mathern
Tobacco cleaning machineC. M. Spierer Tool holderG. R. Lang
Tool holder
Torpedo, Self-propellingH. W. Shonnard
Transmission mechanism. J. W. Breyfogle
Trough-clamp. A. J. Ruppert
Trock, Car
Truck, Car. G. G. Floyd Truck, Automobile-tire. S. Wohfeld
Tire-smoothing apparatus, Pneumatic A. Mathern Tobacco cleaning machine. C. M. Spierer Tool holder
Tubing, Flexible metallicII. Tideman
Tug, Trace
ting
Turbine vanes or buckets, Machine for
Turbine, Find pressireC. A. Parsons Turbine vanes or buckets, Machine for cuttingH. Geisenhoner Type-mold body blocks, Providing nick pro- jections onH. H. Hardinge TypewriterC. S. Du Belle Typewriter attachmentF. Manning Typewriter cabinet (2 pats.)H. J. Ritter Typewriting machine
Typewriter
Typewriter cabinet (2 pats.)H. J. Ritter Typewriting machineO. L. Ingram
Typewriting machine. O. L. Ingram Typewriting machine. C. E. Smith Typewriting machine. H. H. Steele Typewriting machine. F. J. Dyett
Typewriting machineF. J. Dyett
Typewriting machineL. S. Burridge
Typewriting machine
UmbrellaF. W. Schroeder
Umbrella, FoldingG. W. Woollett
Umbrella, Folding S. J. Clark
Vacuum producing device
ValveS. D. Clark et al. O. Schlemmer
Valve, Automatic safety gas. H. L. Young Valve, CarbureterN. P. Mader
Valve, Fuse
Valve mechanism for air compressorsG. H. Reynolds
Valve, Pressure regulatedA. T. Edmouson Valve, Sliding gateE. W. Hoyt
Vaults, safes &c., Protective system and apparatus for safeguardingJ. C. Gough
Vehicle attachment
Vehicle wheelJ. M. Selleck
Vehicle wheelC. Humbert et al.
Ventilator and exhaust. A. F. Schwameeke
Umbrella, Folding S. J. Clark Vacuum cleaner. I. Neilsen Vacuum prodneing device. S. D. Clark et al. Valve. O. Schlemmer Valve, Automatic safety gas. H. L. Young Valve, Carbureter. N. P. Mader Valve, Fusc. N. B. Creighton Valve gear for engines. C. F. Prescott Valve mechanism for air compressors. G. H. Reynolds Valve, Pressure regulated. A. T. Edmouson Valve, Sliding gate. E. W. Hoyt Vaults. safes &c. Protective system and apparatus for safeguarding. J. C. Gough Vehicle attachment. W. H. Long Vehicle attachment, Motor. C. A. Cline, Jr. Vehicle wheel. J. M. Selleck Vehicle wheel. C. H. Bailey Vehicle wheel. C. Humbert et al. Vending machine. W. F. Ablett Ventilator and exhaust. A. F. Schwaimecke Vise. D. Parks Wafer machine. J. M. Ribe Wagon-body dumping mechanism.
Wagon lyaka Automatia C. W. Prawan
Wagon-body dumping mechanism. E. P. Le Gore Wagon brake, AutomaticG. W. Brewer Wagon, DumpJ. Stifter Wagon, DunpingE. R. Jones et al. Wagon, Postman's deliveryG. F. Schulze Warp stop mechanismJ. W. Bounds et al. WashboardC. B. Tompkins Water from its contained iron in a ceutin- uous circuit. Apparatus for freelug
Wagon, Postman's delivery. G. F. Schulze
Washboard
uons circuit, Apparatus for freeling
Water-purifying apparatus. J. C. W. Green
Water-pnrifying apparatus. J. C. W. Greth Water wheel. Z. C. Ferris Weft-fork mechanism, J. Northrop Weight, Sash. E. A. Custer
Weight, WindowF. L. Manpin
Wolding proching Electric H. Buchler
Wheel S. Z. de Ferranti
Wind shield F. Parizek
Wire-splicer
Weight, Sash. E. A. Custer Weight, Window. F. L. Manpin Weirs, &c. Automatic valve or gate for H. Buchler Welding machine, Electric. S. Z. de Ferranti Wheel G. H. Langton Wind shield F. Parizek Windlass C. Andrade, Jr. Wire-splicer M. Friday Wood-bending machine S. R. Bailey Wood washer F. G. Sargent Wrench H. H. Schlenter
Wrench
DESIGNS.

Caskets or coffins, Lug for...P. R. Zinser Game board....H. W. Allen et al. Light shade...A. J. Sauford Thermostat casing...H. A. Ames Trimming...F. Wood

Issued October 25, 1910.

Syringe, VagiualF. A. Neven TagJ. Praetz		Coin controlled mechanism
Tag forming and attixing machine	MECHANICAL PATENTS.	Coin controlled mechanismG. H. Davis
Tag forming and stitching machine	Abdominal supporterM. W. Ferris Abrading surfaceE. F. Smith	Coin eounting and wrapping mechanism
E. H. Michener	Adding apparatusJ. W. Alexander	Coin registerP. Hochgartel
Tanks, Nou-freezing connection for	Adding machineJ. A. Toomey	Column
Tea cupF. B. Groff	AeroplaneJ. M. Davis AeroplaneL. De Forest	Compound
Telephone attachmentW. C. Fisk et al.	Air compressorG. P. O. Alvergnat	W. H. McFarland
Telephone receiver holderJ. F. Hines Telephones, Indicating means for party-	Alarm system, ElectricalF. Castle Amusement deviceA. A. Brengel	Concrete mixing machineJ. Muller
lineJ. H. Blythe	Augle bracketL. Lilley	Concrete work, Anchorage for
Telephonic line-connecting system, Self- actingB. Kugelmann	Animals, Apparatus for applying solutions toF. R. Dresback et al.	Condenser, Electrolytic. E. E. F. Creighton
Thermal regulation, Method of and appara-	AnnnnciatorA. Lungen	Conduits, Laving
the for	Antiskidding deviceF. A. Ruff Athletic grounds, eover forJ. L. O'Donnell	Controlling apparatus
Throw-out switchW. H. Tncker et al.	Auger-deflectorG. H. Miller	ConveyerJ. M. Dodge Conveyer-chain cleat attachment
Tile, Wall	Autocar wheelR. Kronenberg Automobile attachmeutG. H. Chandlee	Conveyer, ScreeningsU. Wedge
Timer and distributerT. H. McQuown	Automatic timer	Corking machineJ. K. Lannmark
TireI. B. Kempshall Tire, ResilientD. A. York	Bag cleanerW. Scott Bait, ArtificialG. H. Garrison	Corp-popper
Tire-retaining flange for wheel-rims	Ball and socket jointF. A. Dillingham	
R. S. Bryant Tire-setter. E. A. Grenelle	Banjo bridgeE. L. Griffic BargeR. J. Donovan	Couch, Folding (2 pats)G. G. Powers
Tire-smoothing apparatus, Pneumatic	Bark-rossing device	Crimping machineJ. A. Coeker Cne chalkerA. L. Jay
Tobacco cleaning machineC. M. Spierer	Beater, RotaryJ. H. Pearson Bed or couchW. J. Grotenhuis	Cultivator
Tool holder	Red strapJ. S. Salinger	Cultivator, AutomobileA. R. Lynch
Tool holder	Bed, Wall	Cultivators, Side harrow for. H. T. Smith CulvertJ. H. Schlafty
Torpedo, Self-propellingH. W. Shonnard	Beer reclaimerJ. H. Champ	Culvert, MetallicO. K. Harry
Toy	Bicycle steering deviceR. P. Noble Binder, Loose-leafO. R. Mayer et al.	Currency, Form for paperB. Brower Current controllerF. L. Sessions
Transportation system	Binder, Loose-leafK. J. Sarles et al.	Curtain fastener and the likeH. H. Pitner
Trough-clamp	Binder, Loose-leaf, H. G. Fornoff et al. Binding-post A. F. Wallbillich	Dams, docks, and similar water-retaining or water-excluding structures, Constructing.
Trnck, Car	Blade tie	T. H. Skinner
Truck, Car	Boat canopyR. L. Kenyon Boiler-flue, DetachableO. C. Borgen	Dental cabinetS. C. Sims Dental instrumentM. H. Toomey
Tube cleaner, RotaryR. G. Jamison	Boiler seale preventerJ. W. Stephens	Despatch system, VacuoE. Flint
Tubes, Blow-out guard for inner	Boiler sediment remover, Steam	Dice, SphericalA. W. Wahlin Dish panM. Thompson-Meares
Tubing, Flexible metallicII. Tideman	Boilers and conserving the heat energy	Display cabinet for photographs
Tug, Trace	therein, Apparatus for recovering blow- off product from	Door and means for operating the same
Turbine	Boilers, Automatic water controller for	J. E. Ogden
Turbine buckets or vanes, Machine for cuttingS. T. Fonda	Boiling-eap	Door lock, slidingA. H. Stone
Turbine, Fluid pressureC. A. Parsons	Book and uewspaper holder	Door, MetallicE. G. Budd
Turbine vanes or buckets, Machine for cutting	Book, Manifolding salesE. K. Bottle	Door operating mechanism, Dumping J. O. Neikirk
Type-mold body blocks, Providing nick pro-	Book or pad, Manifolding (2 pats.) B. C. Maxwell	Dredge
jections on H. H. Hardinge Typewriter C. S. Du Belle	Boot and shoc protector setting machine	Dredge, SectionalG. E. Turner DrillF. E. Farley
Typewriter attachmentF. Manning Typewriter cabinet (2 pats.)H. J. Ritter	Bottle and lamp chimney cleaner	Drilling attachment, CrossO. A. Smith
Typewriting machineO. L. Ingram	P Buck	Drilling machineJ. S. Barnes Drinking fountain, Bubbling
Typewriting machineC. E. Smith Typewriting machineH. H. Steele	Bottle, Non-refillable W. B. Powell Bottle stopper E. L. Beck	Drip pan S. C. Keith, Jr. J. Cameron
Typewriting machineF. J. Dyett	Box C. F. A. Eddy	Driving mechanism, Separable locking rack
Typewriting machine (2 pats.)G. H. Smith Typewriting machineL. S. Burridge	Bracelet and the likeG. Widenmeyer Braiding machineG. Donat	forB. F. Brewster Drumhead tightenerF. Holton
Typewriting machineT. J. Coo	Brake-adjuster, Automatie (2 pats.)	Dust and wind guard
Typewriting machineC. W. Howell Typewriting machineH. Resch	Brake-block holder, Adjustable vehicle	Dyeing machineG. E. Drum et al. Eaves trough hangers, Machine for form-
UmbrellaF. W. Schroeder	L. J. Badgley	ing
Umbrella cover. RemovableL. O. Barr Umbrella, FoldingG. W. Woollett	Brush J. L. Hitz Buckle fastening E. M. Chapman	Electric brakeR. R. Dunlop Electric brakingJ. F. Tritle
Umbrella, FoldingF. Pokorny	Buggy-bow restJ. A. Stauord	Electric devices, Operating vapor
Umbrella, Folding S. J. Clark Vacuum cleaner I. Neilsen	Building block	Electric light cords, Antomatic rewinding
Vacuum producing device	pats.)	device for
ValyeS. D. Clark et al. O. Schlemmer	Burnishing machineW. G. Dalton Button, CuffJ. L. Herzog	Electric light fixtures, Adjustable joint for E. F. Pierce
Valve, Automatic safety gas. H. L. Young	Can cover locking device, Milk	Electric machine brush, Dynamo
Valve, CarbureterN. P. Mader Valve, FuseN. B. Creighton	Car F. S. Ingoldsby	Electric machines, Means for ventilating
Valve gear for enginesC. F. Prescott	Car. Automatic dumpingB. L. Worthen Car brakeR. M. Fox	dynamo
Valve mechanism for air compressors G. H. Reynolds	Car doorA. J. Ricker	Electrical apparatus terminal. W. B. Porter
Valve, Pressure regulatedA. T. Edmouson	Car Dump. A. Campbell Car, Dump	Electrical circuit breakerH. R. Stuart Electrical distribution system
Valve, Sliding gateE. W. Hoyt Vaults, safes &c., Protective system and	Car grain door, FreightH. W. Drew	A. S. Hubbard
apparatus for safeguardingJ. C. Gough	Car. Passenger	Electrical switchA. F. Fnrbush ElectrodeR. H. Wolff
Vehicle attachment, Motor. C. A. Cline, Jr.	Car roofH. Stillman	Electrode for galvanic elements, Hollow
Vehicle wheelJ. M. Selleck Vehicle wheelC. H. Bailey	Car step, ExtensionB. Smith et al. Car, StockJ. C. Jones	carbon
Vehicle wheel	Car ventilator A. A. Kempski Car window E. H. Harriman ct al.	Electromagnets, Device for controlling the
Vending machine	CarbnreterJ. G. Williams	consecutive operation ofF. G. Agrell ElectroplatingF. J. McElhone
ViseD. Parks	CarbureterW. C. Carter CarbureterP. C. Cannon	Elevator safety deviceJ. Kulp Emblem fastenerD. S. Haynes
Wafer machineJ. M. Ribe Wagon-body dumping mechanism	Carbureter	Embroidery hoop
E. P. Le Gore	Carbureter. W. F. Rothe Carbureter. W. E. Haines	End gate fastenerB. F. Springer Engine cooling attachment, Explosive
Wagon brake, AutomaticG. W. Brewer Wagon, DumpJ. Stifter	CarbnreterP. Daniel	S. S. Scott
Wagon, DumpingE. R. Jones et al.	CarbureterF. L. Kingston Carpet beaterA. E. Bennett et al	Engine ignition system, HydrocarbonR. Huff
Wagon, Postman's delivery, G. F. Schulze Warp stop mechanism, J. W. Bounds et al.	Cashing perforatorJ. C. Swan	Engine-starterE. C. Allison
Washboard	Cash registerW. I. Spangler Cash registerT. Carroll	Engines and turbines, Charge-forming arrangement for use in internal combustion
uons circuit, Apparatus for freeing	Caster socketB. P. Kenyon	A. M. Low
Water-pnrifying apparatus. J. C. W. Greth	Caster tubular axleB. P. Kenyon Casting fluid metal, Art of an apparatus	Engines, Auxiliary liquid hydrocarbon tank for interval combustionA. E. Ranney
Water wheelZ. C. Ferris	for	Engines, Device for tool holders in cut-
Weft-fork mechanism,J. Northrop Weight, SashE. A. Custer	Cattle guard	ting
Weight, WindowF. L. Maupin	Chain linkJ. M. Dodge Cheese cutterH. Bick	Engrayer's blockJ. A. Bowers
Weirs, &c., Automatic valve or gate for	ChuckE. R. Sibert	Eugenol and albumin, Preparation of
Welding machine, Electric	Cigar. S. Gessler Cigarette machinery. E. Pugibet	Exhausting machineW. R. Bnrrows
S. Z. de Ferranti Wheel	Cigarettes and the like, Mouthpiece for	Expansion boltH. W. Pleister
Wind shield F. Parizek Windlass C. Andrade Jr.	Circuit breakerJ. W. Surbrug	Eyeglass connectionW. W. Hoffman Face plate holding means
Wire-splicer	Circuit closing deviceL. R. Saunders Circuit controllerW. A. Atwood	FaucetB. M. W. Hanson R. L. Caffery
Wood-bending machineS. R. Bailey Wool washerF. G. Sargent	Circuit interrupterF. W. Harris	· Faucet
Wrench	Clamping device	Fence fastener, WireW. F. M. Smail Fence, PortableJ. A. Trambley
Writing machine, AutomaticG. P. Riggs	ClockJ. J. Busenbenz	Ferrules, Making plumbers'R. A. Merrill
DESIGNS. Casket handle, Burial	Cloth piling machineW. M. Swerdlove Clothes drying frameE. R. Greiner	Filament and manufacturing the same

ClutchP. English ClutchH. W. Lloyd
Clutch, Friction driving (Reissue)
Cock
Coin controlled mechanismG. H. Davis Coin counting and wrapping mechanism
Coin register C. Schmidt Column C. C. Barrick Companyd W. L. O'Pryant
Computing and recording machine W. H. McFarland Conerete construction
Concrete mixing machineJ. Muller Concrete work, Anchorage forH. L. Weber
Clutch. P. English Clntch
Conveyer-chain cleat attachment
Corking machineJ. K. Lannmark Corp-popperC. Gabel Cotton chopper and cultivator
Couch, Folding (2 pats). G. G. Powers Crimping machine. J. A. Coeker Cne chalker. A. L. Jay
Cultivator F. Avery Cultivator attachment E. W. Cornell Cultivator, Automobile A. R. Lynch
Cultivators, Side harrow for T. Smith Culvert
Current controllerF. L. Sessions Curtain fastener and the likeH. H. Pitner Dams, docks, and similar water-retaining or
water-excluding structures, Constructing. T. H. Skinner Dental cabinet
Dental instrumentM. H. Toomey Despatch system, VacuoE. Flint Dice, SphericalA. W. Wah'in Dick pare
Dish pan
Crimping machine. J. A. Coeker Cne chalker. A. L. Jay Cultivator attachment. F. Avery Cultivator attachment. E. W. Cornell Cultivators, Side harrow for. H. T. Smith Culvert. J. H. Schlafly Culvert, Metallic. O. K. Harry Currency. Form for paper. B. Brower Current controller. F. L. Sessions Curtain fastener and the like. H. H. Pitner Dams, docks, and similar water-retaining or water-excluding structures, Constructing. T. H. Skinner Dental cabinet. S. C. Sims Dental instrument. M. H. Toomey Despatch system, Vacuo. E. Flint Dice, Spherical. A. W. Wahlin Dish pan. M. Thompson-Meares Display cabinet for photographs H. Schwartzman Door and means for operating the same Door hanger. C. O. Marx Door lock, sliding. A. H. Stone Door, Metallic. E. G. Budd
Door, MetallicE. G. Budd Door operating mechanism, Dumping J. O. Neikirk
Dredge, Sectional
Drilling machineJ. S. Barnes Drinking fountain, Bubbling S. C. Keith, Jr.
Door, Metallic. Door operating mechanism, Dumping J. O. Neikirk Dredge
Dust and wind guardW. J. Anson Dyeing machineG. E. Drum et al. Eaves trough hangers, Machine for form-
ing H. A. Gibbs Electric brake R. R. Dunlop Electric braking J. F. Tritle
Electric devices, Operating Vapor
Electric light fixtures, Adjustable joint for E. F. Pierce Electric machine brush, Dynamo
Electric machine brush, Dynamo
Electric motor. E. S. Pillsbury Electrical apparatus terminal. W. B. Porter Electrical circuit breaker. H. R. Stuart Electrical distribution system
Electrical switch. A. F. Furbush Electrode. R. H. Wolff Electrode for galvania algebrate Hollow
carbon
consecutive operation of F. G. Agrell Electroplating F. J. McElhone Elevator safety device J. Kulp
Emblem fastener
S. S. Scott Engine ignition system, Hydrocarbon R. Huff
Engine-starterE. C. Allison Engines and turbines, Charge-forming ar- raugement for use in internal combustion
Electrical apparatus terminal. W. B. Porter Electrical circuit breaker. H. R. Stuart Electrical switch. A. S. Hubbard Electrode. R. H. Wolff Electrode for galvanic elements. Hollow carbon. S. Benko Electromagnet coil. C. Aalborg Electromagnets, Device for controlling the consecutive operation of. F. G. Agrell Electroplating. F. J. McElhone Elevator safety device. J. Kulp Emblom fastener. D. S. Haynes Embroidery hoop. H. C. Ferguson End gate fastener. B. F. Springer Engine cooling attachment, Explosive. S. S. Scott Engine ignition system, Hydrocarbon. R. Hnff Engine-starter. E. C. Allison Engines and turbines, Charge-forming arraugement for use in internal combustion A. M. Low Engines, Auxiliary liquid hydrocarbon tank for internal combustion. A. E. Ranney Engines, Device for tool holders in cutting A. Phillibert Engines, Sparking plug for explosive. M. T. Minogue Engraver's block. J. A. Bowers Eugenol and albumin, Preparation of. H. Belart Exhausting machine. W. R. Bnrrows
ting
Engraver's blockJ. A. Bowers Eugenol and albumin, Preparation of H. Belart Explansing machine. W. R. Preparation
Expansion boltH. W. Pleister
Fyeglass connection. W. W. Hollman Face plate holding means. B. M. W. Hanson Faucet. R. L. Caffery Faucet. D. Craig Fence fastener, Wire. W. F. M. Smail Fence, Portable. J. A. Trambley Ferrules, Making plumbers' R. A. Merrill Filament and manufacturing the same. G. Michaud et al.
Fence, PortableJ. A. Trambley Ferrules, Making plumbers'R. A. Merrill Filament and manufacturing the same
G. Michaud et al.

Filaments, Production of incandescent elec-	Lightning arresterF. T. Forster
tric lamp	Lime-water, Producing saturated
Filing device for index papers	Lineman's chair J. W. Davis
Filter J. L. Thomson	Linotype machines, &c., Keyboard mechanism forJ. R. Rogers
Filter J. L. Thomson Filter G. M. Kneuper	Liquid-discharging deviceE. Pagett
FilterL. R. Clark et al. Filter. RotaryG. L. Kennedy	Liquid-fuel burnerC. A. Swartz et al. Liquid-fuel strainer
Finishing toolJ. F. Nicholas	Liquids under pressure, Apparatus for con-
Fire extinguisher, ChemicalF. L. Cooke Firearm breech mechanismJ. P. Hayes	veyingB. C. Rowell LockH. G. Voight
Firing indicator and recorder	LockF. G. Diehl
Fish hookA. W. K. Billings C. F. Cooper	Lock
Fish trap, Shell	Log-scale, tree calibers, and staff, Com-
Flat iron, ElasticT. Van Aller Flue baseJ. Grissom	bined
Flues. Means for cleaning gas	Lumber kiln
	Magnet, LiftingC. E. Frederickson Mail bag delivery and catching apparatus
Flume, MetallicG. L. Hess	W. S. James Manure scraper. L. C. Peterson
Flushing apparatusO. T. Richey Foundry cores, Composition of matter for	Manure scraperL. C. Peterson Manure spreaderH. A. Arnold
	Massage apparatusB. L. Gates
Fuel blocks, Manufacture ofE. Trainer Fumigating apparatusC. De Pree et al.	Match boxJ. W. Fink Matte, HandlingW. D. Kilbourn
FurnaceG. R. Haigh et al.	Measuring feet, lasts, and the like, Device
FurnaceJ. Promenshenkel et al. FurnaceL. L. Knox	for W. Church Metal founding C. B. Carter
Furnace grateJ. F. Cunneen	Metal shaping apparatusW. T. McCreavy
Game apparatusC. J. Dorsey Game deviceP. J. McKinley	Metal straightening and cutting off machine, StripF. B. Shuster
Game device, Bat-and-ball, L. L. George	Metal working machineB. M. W. Hanson
Game, Shooting. J. W. Eaves Garment. E. J. Quigley	Metals from their ores, Extracting W. E. Greenawalt
Garment supportR. H. Buckingham	Metallic sheathingE. G. Budd
Gar burnerB. A. Geurink Gas burnerW. Donley et al.	Milking deviceA. Sabroe Milking machineG. E. Anderson
Gas engine	Milling machine (2 pats.)A. L. De Leeuw
Gas lighting applianceM. Primeau et al. Gas meter. DrumS. Kozminski	Minerals from their ores, Apparatus for separatingS. K. Behrend
Gas retorts or coke-ovens, Machine for dis-	MoistenerJ. S. Cushman
charging and chargingA. M. Duckham Gas washing machineW. H. Carrier	Molding flaskJ. Barker Mop attachmentW. E. Arraut
Gear, Transmission	Mop head and wringer, Combined
Gearing, Belt	A. Fischer, Jr. Motor control
Generator and burnerW. C. Shaffer	Motor controller
Glass-drawing baitR. L. Frink	Mouse and rat trap
Governor	Mower attachment, LawnJ. Kelling
GrappleR. F. Scott	Music leaf turnerE. Wicdemer Music rack, Automatic sheet.A. C. Morand
Grater	Musical instruments, Finger board for
ratus. Ratchet forG. W. Riddle Grinding millC. W. Renear	Necktie supporterJ. B. Mayo
Gun firing mechanism, Breech-loading	Nozzle
A. T. Dawson et al. GyroseopeH. Anschutz-Kaempfe	Nut lock
HammerW. L. Blake	Nut lockR. W. Bridgman
Hammer, PowerJ. A. Brown et al. HarrowB. A. Wandersee	Nut lock. A. Kesberger Nut lock. C. A. Kuntzsch
Harrow	Nut. LockG. S. Dunkle et al
Harrow	Oil burner, Gas-generatingT. Muchleisen Oil canA. R. Pritchard
Harvester, PotatoJ. P. Brennan	Ore concentrator
Hat and hair fastener, Lady'sJ. Leithem Hay rake and stacker, Combined	Ore separator, MagneticC. A. Sellon Ores, Reduction of sulfur and iron
	A. Wiens
Hay sling triggerI. J. Westad Head restO. F. Neff	Oscillator, ElectricalF. K. Vreeland Oxalates from formates, MakingA. Wiens
Heat increasing device, G. C. St. John et al	Packing for fluid enginesW. F. Purcell
Heel and sole protector setting machine	Packing, ShaftJ. J. Boucher PadloekG. M. Miller et al
High potential switchE. M. Hewlett et al.	Paper and pulp machine, Multiple-color
Hinge and door check, Combined P. Marksch	Paper carriageJ. Raber
Hoisting device	Paper machine slitting attachment
Hoof planeM. W. Harvey HoopF. Knolle Horizontal furnace for heating steel or	Paper rolls, Core forD. B. Donnelly
Horizontal furnace for heating steel or iron plates, angle-irons and the like, Com-	Paper stock screenF. D. Fowler
binedE. Curran	Perforating designs, Electrical apparatus forB. H. Wallin
Horns, Device for sounding motor car H. Beaucourt	Photographer's printing frame
Horseshoe	Photographic emulsion (Reissue)
Hose clampM. PMcLaughlin	Photographic images in natural colors, Pro-
Hose holderD. F. Regan	jecting
Hose supporterC. Kanfmann et al. Hydraulic couplingV. Tichomiroff et al.	Photographic printing frame. J. H. Henser Photoprinting frame J. F. Curtis
Incubator heating tankP. J. McCabe	Piano actionL. Avisus
Insulating materialC. F. Peterson Internal combustion engine	Piano bench, Adjustable, W. C. Binckley Piano player, AutomaticA. A. Aarons
T. H. Haberkorn	Pianos, organs, or other instruments. Fall
Internal combustion motor	board for
Ironing and pressing machine	motionJ. Chambless
Ironing boardA. T. Lutz	Pictures in natural colors, Exhibiting mo- tion
Knife and nail cleanerL. P. Wickland Knife constructionF. V. Sandford	Pile shoe
Knockdown bin	Pipe coupling, Train, J. E. Marble Pipe-line system I. Lightcap
Knockdown boxE. L. Walker Ladder base, AdjustableE. Ison	Pipe wrench (2 pats.)L. R. Blackmore
Lamp. AcetyleneF. Guy	PitmanG. E. Smith Plant setterJ. J. Kleeberger
Lamp and reflector therefor	Planter attachment, SeedE, Taylor Planter check rower, Corn
Lamp, Arc.,,,C. A. B. Halverson, Jr.	F. J. and M. A. Krivachek
Lamp glassG. Wamhoff, Jr. Lamp, Incandescent electric	Planter, CornJ. Gross PliersH. R. Cirves
T. E. Robertson	Plow
Lamp, Incandescent gasE. H. Still Lamp, Incandescent gasJ. Maas	Plow, AutomobileA. R. Lynch Plow, DitchingK. P. Nickell
Lamp. Mercury vapor L. E. Dempster Lantern	Plumber's pot
Lantern, VehicleF. E. Davis	Pole, MetallicW. R. Kinnear Portable elevatorE. A. Fritz et al
Lasting apparatus, Boot and shoe E. Langenohl	Potato pickupE. E. Milliken et al
LatchA. Cline	Potential switchJ. D. Ihlder Price and commodity exhibitor. Changeable
Lathe or turning machineA. Thorsby Lathes, milling machines, and the like,	Printing machine inking and inking off
Boring-head forA. Muchlmatt	mechanism, RotaryP. O. Laffitte
Leather-dressing machine roll	Printing press sheet-delivery mechanism
Leather, Polishing machine for use in re-	Projectile
pairing cracks in patentV. P. Buck Level and square, Combination	Pruning implement. J. Swegles Pruning shears. S. C. Taylor
G. W. Wolcott	Pull socketT. H. Brady
Lifting jackJ. W. Gaddis Lighting effects on stages by means of	Pull socket R. A. Schoenberg Pump C. L. Heisler
high-tension currents of high frequency. Production of	Pump. C. L. Heisler Pump. &c. F. W. Machiet Pump. apparatus Cam-driven multiple
Production of	Pump apparatus, Cam-driven multiple cylinder,G. W. Kellogg
Lightning arrester	

Lightning arresterF. T. Forster Lime-water, Producing saturated	
Lineman's chairJ. W. Davis Linotype machines, &c., Keyboard mech-	
Lightning arresterF. T. Forster Lime-water, Producing saturated	
Liquids under pressure, Apparatus for conveyingB. C. Rowell Lock	
Lock F. G. Diehl Lock C. E. C. Edey Locomotive ash pan T. H. Curtis	
Liquids under pressure, Apparatus for conveying. B. C. Rowell Lock. H. G. Voight Lock. F. G. Diehl Lock. C. E. C. Edey Locomotive ash pan. T. H. Curtis Log-scale, tree calipers, and staff, Combined C. A. Divine Loom fork-grid clearer M. J. Armstead Lomber kilm. J. McLaughlin	
Limber kiln	
Manure scraper. L. C. Peterson Manure spreader. H. A. Arnold	
Loom fork-grid clearer . M. J. Armstead Lumber kiln . J. McLaughlin Magnet, Lifting . C. E. Frederickson Mail bag delivery and catching apparatus . W. S. James Mannre scraper . L. C. Peterson Mannre spreader . H. A. Arnold Massage apparatus . B. L. Gates Match box . J. W. Fink Matte, Handling . W. D. Kilbourn Measuring feet, lasts, and the like, Device for . W. Church	
Measuring feet, lasts, and the like, Device for	
Metal straightening and cutting off ma- chine, StripF. B. Slunster Metal working machine, B. M. W. Hanson	
Metals from their ores, Extracting	
Metallic sheathing. E. G. Budd Milking device	
Minerals from their ores, Apparatus for separating	
Molding flaskJ. Barker Mop attachmentW. E. Arrant Mop head and wringer, Combined	
Motor control. W. I. Slichter Motor controller. W. B. Lucas	
Mouse and rat trap	
Music rack, Antomatic sheet. A. C. Morand Musical instruments, Finger board for	
Necktie supporter. J. B. Mayo Nozzle. C. S. Jones Nut lock N. D. Munn	
Nut lock	
Nnt lock	
Oil can	
Molding flask. J. Barker Mop attachment W. E. Arrant Mop head and wringer, Combined	
Oxalates from formates, Making. A. Wiens Packing for fluid engines W. F. Purcell Packing, Shaft J. J. Boucher	
Paper and pulp machine, Multiple-color H. Parker Paper and pulp machine, Multiple-color H. Parker	
Paper machine slitting attachment	
Paper stock screenF. D. Fowler Perforating designs, Electrical apparatus for B. H. Wallin	
Photographer's printing frame	
Photographic images in natural colors, Projecting	
Photographic printing frame. J. H. Heiser Photoprinting frame. J. F. Curtis Piano action. L. Avisus Biopa height Minetalla W. C. Pingley	
Piano bench, Adjustable, W. C. Binckley Piano player, AutomaticA. A. Aarons Pianos, organs, or other instruments, Fall	
Picture exhibitors, Motor attachment for motion	
tion	
Pipe-line systemI. Lightcap Pipe wrench (2 pats.)L. R. Blackmore PtmanG. E. Smith	
Plant setterJ. J. Kleeberger Planter attachment, SeedE. Taylor Planter check rower, Corn	
Planter, Corn. J. Gross Pliers. H. R. Cirves	
Plow, Automobile	
Pole, MetallicW. R. Kinnear Portable elevatorE. A. Fritz et al Potato pickupE. E. Milliken et al	
Potential switchJ. D. Ihlder Price and commodity exhibitor, Changeable E. F. Dorsey	
Piano player, Automatic A. A. Aarons Pianos, organs, or other instruments. Fall board for C. F. Reeps Picture exhibitors, Motor attachment for motion J. Chambless Pictures in natural colors, Exhibiting motion W. E. Oliver Pile shoc J. A. Steinmetz Pipe coupling. Train J. E. Marble Pipe-line system L. Lightcap Pipe wrench (2 pats.) L. R. Blackmore Pitman G. E. Smith Plant setter J. J. Kleeberger Planter attachment, Seed E. Taylor Planter check rower, Corn F. J. and M. A. Krivachek Planter, Corn F. J. and M. A. Krivachek Plow F. J. and M. A. Krivachek Plow, Ditching K. P. Nickell Plumber's pot C. A. Johnson, Jr. Pole, Metallic W. R. Kinnear Portable elevator E. A. Fritz et al Potato pickup E. E. Milliken et al Potential switch J. D. Ihlder Price and commodity exhibitor. Changeable E. F. Dorsey Printing machine inking and inking-off mechanism. Rotary P. O. Laffitte Printing press sheet-delivery mechanism C. Henderson Projectile D. I. Selfridge	
C. Henderson Projectile. D. I. Selfridge Pruning implement. J. Swegles Pruning shears. S. C. Taylor	
Pruning shears. S. C. Taylor Pull socket. T. H. Brady Pull socket. R. A. Schoenberg Pump. C. L. Heisler Pump, &c. F. W. Machlet Pump apparatus, Cam-driven multiple	
Dump Co. T. M. Helsler	

Ound Corol I D Dlumanhare
Pump, Hydraulic. R. Cairns Quad, Cored. J. R. Blumenberg Rail joint. F. H. Lookabaugh Rail joint. J. G. McMichael Rail joint. L. and G. Dixon Railway ballast, Tamping bar for tamping ————————————————————————————————————
Rail joint L. and G. Dixon
Ranway banast, Tamping bar for tamping
Railway joint L. A. Brown
Ratchet wrenchJ. P. Hansen
Razor, SafetyE. G. Mergenthaler Razor, SafetyE. I. Young
Razor, Safety
Refrigerating apparatusB. J. Noyes Roofing, Cleat for securing prepared
Rotary engineW. H. Woerheide
Rotary gas engine
Roving and similar frames, Device for preventing singles inV. R. Paige
Razor, Safety. C. II. Likewise Reducing wheel G. A. Webster Refrigerating apparatus B. J. Noyes Roofing. Cleat for securing prepared W. H. Woerheide Rotary engine R. Wall Rotary gas engine II. I. Wilber Rotary press, Double-line. L. A. Wheat Roving and similar frames, Device for preventing singles in V. R. Paige Ruling device M. Meyerheim Sad-iron handle J. H. Throop Safe W. Thomas Sand-entting machine. G. W. Lorimer Sand screen P. G. Tress Sash, Window (2 pats.). A. II. Newpher Saw guide J. R. Berry Saw guide C. Miller Saw guide C. Miller Saw guide C. Miller Saw guide C. Miller Saw guide L. M. Thurlow L. M. Thurlow
Safe
Sand screen
Saw guide. J. R. Berry Saw guide C. Willer
Sawmill setting and receding mechanism
Scale. B. W. King
Sergen frames Corner piece for
Sarganing apparatus F. Inglis
Seal, Envelop. E. A. Speer
Sealing device, Can
Sewage, &c., Apparatus for screening
Sewing machine folding and guiding at-
Sewing machine looperJ. P. Weis
rollers. CombinedR. Wendt
Shampooing deviceJ. Sparenburg
Saw guide
Shaving cup, Sanitary. W. H. J. Downey
Shireld W. Graves Shingle mold. E. M. Walton
Ships at sea, Apparatus for loading
Shipping case. C. O. Wright
Shoe. E. Anderson
Sign, Advertising M. Bullock
Sign receptable fasteningF. J. Russell
Sign receptacle fasteningF. J. Russell Sign receptacle fastening eyelet (2 pats.)
Sign receptacle fastening F. J. Russell Sign receptacle fastening eyelet (2 pats.). F. J. Russell Signaling apparatus for airships and the like
Sign receptacle fasteningF. J. Russell Sign receptacle fastening eyelet (2 pats.) F. J. Russell Signaling apparatus for airships and the like
Sign receptacle fastening F. J. Russell Sign receptacle fastening eyelet (2 pats.). F. J. Russell Signaling apparatus for airships and the like P. Lentz Signaling apparatns, Flash light G. H. Butterworth et al Signaling system E. Parsons Silo P. B. Naylor Skate A. Hulberth
Sharpener for mowing machines, Knife J. Knecht Sharpening stones, Box for E. B. Pike Shaving cup. Sanitary. W. H. J. Downey Shield W. Graves Shingle mold E. M. Walton Ship hull cleaner J. M. Towne et al Ships at sea, Apparatus for loading C. M. Askegren Shipping case C. O. Wright Shoek loader E. Anderson Sign, Advertising W. M. Bullock Sign receptacle fastening F. J. Russell Sign receptacle fastening eyelet (2 pats.). F. J. Russell Signaling apparatus for airships and the like P. Lentz Signaling apparatus, Flash light G. H. Butterworth et al Signaling system E. Parsons Silo P. B. Naylor Skate A. Hulberth Skirt gage M. Mohlsick Skylight, Artificial D. M. Moore
Sign receptacle fastening F. J. Russell Sign receptacle fastening eyelet (2 pats.). F. J. Russell Signaling apparatus for airships and the like P. Lentz Signaling apparatns, Flash light G. H. Butterworth et al Signaling system E. Parsons Silo P. B. Naylor Skate A. Hulberth Skirt gage M. Mohlsick Skylight, Artificial D. M. Moore Slag, Apparatus for granulating blast-furnace W. R. Warren
Sign receptacle fasteningF. J. Russell Sign receptacle fastening eyelet (2 pats.) F. J. Russell Signaling apparatus for airships and the like
Sign receptacle fastening F. J. Russell Sign receptacle fastening eyelet (2 pats.). F. J. Russell Signaling apparatus for airships and the like P. Lentz Signaling apparatns, Flash light G. H. Butterworth et al Signaling system E. Parsons Silo P. B. Naylor Skate A. Hulberth Skirt gage M. Mohlsick Skylight, Artificial D. M. Moore Slag, Apparatus for granulating blast-furnace W. R. Warren Smoke-consuming apparatus for locomotives J. Loftus Smoke-preventing and fuel-economizing appliance W. J. and G. Storey
Sign receptacle fastening F. J. Russell Sign receptacle fastening eyelet (2 pats.). F. J. Russell Signaling apparatus for airships and the like. G. II. Butterworth et al Signaling apparatus. Flash light. G. II. Butterworth et al Signaling system. E. Parsons Silo. P. B. Naylor Skate. A. Hulberth Skirt gage. M. Mohlsick Skylight, Artificial. D. M. Moore Slag, Apparatus for granulating blast-furnace. W. R. Warren Smoke-consuming apparatus for locomotives. J. Loftus Smoke-preventing and fuel-economizing appliance. W. J. and G. Storey Smoke-retarding device. E. Kruse Smokers' articles, Mouthpiece or stem for
Sign receptacle fastening F. J. Russell Sign receptacle fastening eyelet (2 pats.). F. J. Russell Signaling apparatus for airships and the like P. Lentz Signaling apparatns, Flash light. G. H. Butterworth et al Signaling system E. Parsons Silo P. B. Naylor Skate A. Hulberth Skirt gage M. Mohlsick Skylight, Artificial D. M. Moore Slag, Apparatus for granulating blast-furnace W. R. Warren Smoke-consuming apparatus for locomotives. J. Loftus Smoke-preventing and fuel-economizing appliance W. J. and G. Storey Smoke-retarding device E. Kruse Smokers' articles, Mouthpiece or stem for M. Feder Smoking pipe B. T. Genthner
Sign receptacle fastening F. J. Russell Sign receptacle fastening eyelet (2 pats.). F. J. Russell Signaling apparatus for airships and the like P. Lentz Signaling apparatus. Flash light. G. H. Entterworth et al Signaling system. E. Parsons Silo P. B. Naylor Skate. A. Hulberth Skirt gage M. Mohlsick Skylight, Artificial D. M. Moore Slaz, Apparatus for granulating blast-furnace. W. R. Warren Smoke-consuming apparatus for locomotives. J. Loftus Smoke-preventing and fnel-economizing appliance. W. J. and G. Storey Smoke-retarding device. E. Kruse Smokers articles, Mouthpiece or stem for M. Feder Smoking pipe B. T. Genthner Sock J. R. Hayden Soldering iron T. Van Aller
Sign receptacle fastening F. J. Russell Sign receptacle fastening eyelet (2 pats.). F. J. Russell Signaling apparatus for airships and the like P. Lentz Signaling apparatus. Flash light G. H. Butterworth et al Signaling system E. Parsons Silo P. B. Naylor Skate A. Hulberth Skirt gage M. Mohlsick Skylight, Artificial D. M. Moore Slag, Apparatus for granulating blast-furnace W. R. Warreu Smoke-consuming apparatus for locomotives J. Loftus Smoke-preventing and fuel-economizing appliance W. J. and G. Storey Smoke-retarding device E. Kruse Smokers' articles, Mouthpiece or stem for M. Feder Smoking pipe B. T. Genthner Sock J. R. Hayden Soldering iron T. Van Aller Sound-producing device J. P. Northey Spark arrester L. L. Goodrich, Jr.
Sign receptacle fastening F. J. Russell Sign receptacle fastening eyelet (2 pats.). F. J. Russell Signaling apparatus for airships and the like P. Lentz Signaling apparatus. Flash light G. H. Entterworth et al Signaling system E. Parsons Silo P. B. Naylor Skate A. Hulberth Skirt gage M. Mohlsick Skylight, Artificial D. M. Moore Slag, Apparatus for granulating blast-furnace W. R. Warren Smoke-consuming apparatus for locomotives J. Loftus Smoke-preventing and fnel-economizing appliance W. J. and G. Storey Smoke-retarding device E. Kruse Smoker's articles. Mouthpiece or stem for M. Feder Smoking pipe B. T. Genthner Sock J. R. Hayden Soldering iron T. Van Aller Sound-producing device J. P. Northey Spark arrester L. L. Goodrich, Jr. Spectacles. eyeglasses, and other articles, Case for F. J. Willmott
Skylight, Artificial
Skylight, Artificial. D. M. Moore Slag, Apparatus for granulating blast-furnace. W. R. Warreu Smoke-consuming apparatus for locomotives. J. Loftus Smoke-preventing and fnel-economizing appliance. W. J. and G. Storey Smoke-retarding device. E. Kruse Smokers' articles, Mouthpiece or stem for M. Feder Smoking pipe. B. T. Genthner Sock. J. R. Hayden Soldering iron. T. Van Aller Sound-producing device. J. P. Northey Spark arrester. L. L. Goodrich, Jr. Spectacles, eyeglasses, and other articles, Case for F. J. Willmott Spinning machine. F. S. Culver et al Sponging apparatus for tailors. B. Paskowitz Spool holder. M. J. Frogue et al Square and bevel, Combination. J. O. Thomas Stacker, Pneumatic. W. W. Brower Stamp-affixing mechanism. E. J. Abbott Stamp-affixing mechanism. E. J. Abbott Stamp. Self-inking hand. A. J. Peterson Station indicator. W. A. Bryant Steam boiler. C. A. Bettington Steam boiler. C. A. Bettington Steam uperheater. J. G. Moritz Steel, Tempering. A. M. Sundborg Sterectype plates, Machine for rectifying
Skylight, Artificial. D. M. Moore Slag, Apparatus for granulating blast-furnace. W. R. Warreu Smoke-consuming apparatus for locomotives. J. Loftus Smoke-preventing and fnel-economizing appliance. W. J. and G. Storey Smoke-retarding device. E. Kruse Smokers' articles, Mouthpiece or stem for M. Feder Smoking pipe. B. T. Genthner Sock. J. R. Hayden Soldering iron. T. Van Aller Sound-producing device. J. P. Northey Spark arrester. L. L. Goodrich, Jr. Spectacles, eyeglasses, and other articles, Case for F. J. Willmott Spinning machine. F. S. Culver et al Sponging apparatus for tailors. B. Paskowitz Spool holder. M. J. Frogue et al Square and bevel, Combination. J. O. Thomas Stacker, Pneumatic. W. W. Brower Stamp-affixing mechanism. E. J. Abbott Stamp-affixing mechanism. E. J. Abbott Stamp. Self-inking hand. A. J. Peterson Station indicator. W. A. Bryant Steam boiler. C. A. Bettington Steam boiler. C. A. Bettington Steam uperheater. J. G. Moritz Steel, Tempering. A. M. Sundborg Sterectype plates, Machine for rectifying
Skylight, Artificial. D. M. Moore Slag, Apparatus for granulating blast-furnace. W. R. Warreu Smoke-consuming apparatus for locomotives. J. Loftus Smoke-preventing and fnel-economizing appliance. W. J. and G. Storey Smoke-retarding device. E. Kruse Smokers' articles, Mouthpiece or stem for M. Feder Smoking pipe. B. T. Genthner Sock. J. R. Hayden Soldering iron. T. Van Aller Sound-producing device. J. P. Northey Spark arrester. L. L. Goodrich, Jr. Spectacles, eyeglasses, and other articles, Case for F. J. Willmott Spinning machine. F. S. Culver et al Sponging apparatus for tailors. B. Paskowitz Spool holder. M. J. Frogue et al Square and bevel, Combination. J. O. Thomas Stacker, Pneumatic. W. W. Brower Stamp-affixing mechanism. E. J. Abbott Stamp-affixing mechanism. E. J. Abbott Stamp. Self-inking hand. A. J. Peterson Station indicator. W. A. Bryant Steam boiler. C. A. Bettington Steam boiler. C. A. Bettington Steam uperheater. J. G. Moritz Steel, Tempering. A. M. Sundborg Sterectype plates, Machine for rectifying
Skylight, Artificial. D. M. Moore Slag, Apparatus for granulating blast-furnace. W. R. Warreu Smoke-consuming apparatus for locomotives. J. Loftus Smoke-preventing and fnel-economizing appliance. W. J. and G. Storey Smoke-retarding device. E. Kruse Smokers' articles, Mouthpiece or stem for M. Feder Smoking pipe. B. T. Genthner Sock. J. R. Hayden Soldering iron. T. Van Aller Sound-producing device. J. P. Northey Spark arrester. L. L. Goodrich, Jr. Spectacles, eyeglasses, and other articles, Case for F. J. Willmott Spinning machine. F. S. Culver et al Sponging apparatus for tailors. B. Paskowitz Spool holder. M. J. Frogue et al Square and bevel, Combination. J. O. Thomas Stacker, Pneumatic. W. W. Brower Stamp-affixing mechanism. E. J. Abbott Stamp-affixing mechanism. E. J. Abbott Stamp. Self-inking hand. A. J. Peterson Station indicator. W. A. Bryant Steam boiler. C. A. Bettington Steam boiler. C. A. Bettington Steam uperheater. J. G. Moritz Steel, Tempering. A. M. Sundborg Sterectype plates, Machine for rectifying
Skylight, Artificial. D. M. Moore Slag, Apparatus for granulating blast-furnace. W. R. Warreu Smoke-consuming apparatus for locomotives. J. Loftus Smoke-preventing and fnel-economizing appliance. W. J. and G. Storey Smoke-retarding device. E. Kruse Smokers' articles, Mouthpiece or stem for M. Feder Smoking pipe. B. T. Genthner Sock. J. R. Hayden Soldering iron. T. Van Aller Sound-producing device. J. P. Northey Spark arrester. L. L. Goodrich, Jr. Spectacles, eyeglasses, and other articles, Case for F. J. Willmott Spinning machine. F. S. Culver et al Sponging apparatus for tailors. B. Paskowitz Spool holder. M. J. Frogue et al Square and bevel, Combination. J. O. Thomas Stacker, Pneumatic. W. W. Brower Stamp-affixing mechanism. E. J. Abbott Stamp-affixing mechanism. E. J. Abbott Stamp. Self-inking hand. A. J. Peterson Station indicator. W. A. Bryant Steam boiler. C. A. Bettington Steam boiler. C. A. Bettington Steam uperheater. J. G. Moritz Steel, Tempering. A. M. Sundborg Sterectype plates, Machine for rectifying
Skylight, Artificial. D. M. Moore Slag, Apparatus for granulating blast-furnace. W. R. Warreu Smoke-consuming apparatus for locomotives. J. Loftus Smoke-preventing and fnel-economizing appliance. W. J. and G. Storey Smoke-retarding device. E. Kruse Smokers' articles, Mouthpiece or stem for M. Feder Smoking pipe. B. T. Genthner Sock. J. R. Hayden Soldering iron. T. Van Aller Sound-producing device. J. P. Northey Spark arrester. L. L. Goodrich, Jr. Spectacles, eyeglasses, and other articles, Case for F. J. Willmott Spinning machine. F. S. Culver et al Sponging apparatus for tailors. B. Paskowitz Spool holder. M. J. Frogue et al Square and bevel, Combination. J. O. Thomas Stacker, Pneumatic. W. W. Brower Stamp-affixing mechanism. E. J. Abbott Stamp-affixing mechanism. E. J. Abbott Stamp. Self-inking hand. A. J. Peterson Station indicator. W. A. Bryant Steam boiler. C. A. Bettington Steam boiler. C. A. Bettington Steam uperheater. J. G. Moritz Steel, Tempering. A. M. Sundborg Sterectype plates, Machine for rectifying
Skylight, Artificial. D. M. Moore Slag, Apparatus for granulating blast-furnace. W. R. Warreu Smoke-consuming apparatus for locomotives. J. Loftus Smoke-preventing and fnel-economizing appliance. W. J. and G. Storey Smoke-retarding device E. Kruse Smokers' articles, Mouthpiece or stem for M. Feder Smoking pipe. B. T. Genthner Sock. J. R. Hayden Soldering iron. T. Van Aller Sound-producing device. J. P. Northey Spark arrester. L. L. Goodrich, Jr. Spectacles, eyeglasses, and other articles, Case for F. J. Willmott Spinning machine. F. S. Culver et al Sponging apparatus for tailors. B. Paskowitz Spool holder. M. J. Eidam Spring wheel. A. J. Frogue et al Square and bevel, Combination. J. O. Thomas Stacker. Pneumatic. W. W. Brower Stamp-affixing mecbanism. E. J. Abbott Stamp-affixing mechanism. E. J. Abbott Stamp-affixing mechanism. E. J. Abbott Stamp boiler. C. A. Bettington Steam boiler. C. A. Bettington Steam boiler. C. A. Bettington Steam boiler. C. A. Booritz Steel, Tempering. A. M. Sundborg Stereotype plates, Machine for rectifying F. Orsoni Stove. J. Gruber Stovepipe clamp. G. R. Beegen Stovepipe clamp. G. R. Beegen Stovepipe holder, Safety J. W. Whitaker Strainer. W. S. Elliott Straw elevator. J. P. Sneddon Superheater loiler. J. P. Sneddon Superheater loiler J. P. Sneddon
Skylight, Artificial. D. M. Moore Slag, Apparatus for granulating blast-furnace. W. R. Warreu Smoke-consuming apparatus for locomotives. J. Loftus Smoke-preventing and fnel-economizing appliance. W. J. and G. Storey Smoke-retarding device E. Kruse Smokers' articles, Mouthpiece or stem for M. Feder Smoking pipe. B. T. Genthner Sock. J. R. Hayden Soldering iron. T. Van Aller Sound-producing device. J. P. Northey Spark arrester. L. L. Goodrich, Jr. Spectacles, eyeglasses, and other articles, Case for F. J. Willmott Spinning machine. F. S. Culver et al Sponging apparatus for tailors. B. Paskowitz Spool holder. M. J. Eidam Spring wheel. A. J. Frogue et al Square and bevel, Combination. J. O. Thomas Stacker. Pneumatic. W. W. Brower Stamp-affixing mecbanism. E. J. Abbott Stamp-affixing mechanism. E. J. Abbott Stamp-affixing mechanism. E. J. Abbott Stamp boiler. C. A. Bettington Steam boiler. C. A. Bettington Steam boiler. C. A. Bettington Steam boiler. C. A. Booritz Steel, Tempering. A. M. Sundborg Stereotype plates, Machine for rectifying F. Orsoni Stove. J. Gruber Stovepipe clamp. G. R. Beegen Stovepipe clamp. G. R. Beegen Stovepipe holder, Safety J. W. Whitaker Strainer. W. S. Elliott Straw elevator. J. P. Sneddon Superheater loiler. J. P. Sneddon Superheater loiler J. P. Sneddon
Skylight, Artificial
Skylight, Artificial. D. M. Moore Slag, Apparatus for granulating blast-furnace. W. R. Warreu Smoke-consuming apparatus for locomotives. J. Loftus Smoke-preventing and fnel-economizing appliance. W. J. and G. Storey Smoke-retarding device. E. Kruse Smokers' articles, Mouthpiece or stem for M. Feder Smoking pipe. B. T. Genthner Sock. J. R. Hayden Soldering iron. T. Van Aller Sound-producing device. J. P. Northey Spark arrester. L. L. Goodrich, Jr. Spectacles, eyeglasses, and other articles, Case for F. J. Willmott Spinning machine. F. S. Culver et al Sponging apparatus for tailors. B. Paskowitz Spool holder. M. J. Frogue et al Square and bevel, Combination. J. O. Thomas Stacker, Pneumatic. W. W. Brower Stamp-affixing mechanism. E. J. Abbott Stamp-affixing mechanism. E. J. Abbott Stamp. Self-inking hand. A. J. Peterson Station indicator. W. A. Bryant Steam boiler. C. A. Bettington Steam boiler. C. A. Bettington Steam uperheater. J. G. Moritz Steel, Tempering. A. M. Sundborg Sterectype plates, Machine for rectifying

Ticket or advertising and price card holder,
Vilk C I Warking
Tide-water motor. M. Logan Tile-coating machinery P. Scovill
The Matallia A. J. P. Scovill
Tire, Metallic. A. J. Portescue Tire protector. O. Neukirch
Tire Resilient X II Hassad
Tires Pretactive transl for translate
Tobacco pipe. A. E. Matson Tobacco supple, Making I. Evers
Tobacco pipe
Tobacco supple, Making
Toughe support Wagen P C Lynn,
Tongs. L. E. Funk Tongue support, Wagon R. G. Lucas Tool (2 pats.) E. C. Thorselmidt
Tool driver, Spiral, D. Rioux Toothpick, Composition, A. II. Baird
Toothpick, CompositionA. II. Baird
Torpedoes, Means for increasing tension of
gaseous propellants forM. Glass
Toy nistel P. D. Sinney
Trace fastenerJ. C. Crutchfield
Track instrument
gaseous propellants forM. Gass Toy figureC.J. Dorsey Toy pistolR. D. Simpson Trace fastenerJ. C. Crutchtield Track instrumentC.A. Coolidge Train-stopping mechanism, Automatic
www.w
Transmission mechanism
Transportation system 1 S Wilking
Truck A Marvin
Truck constructionW. R. McKeen, Jr.
Tube and header connection
Tube cleaner. J. C. Alexander Tube cleaner. T. Andrews
Tube cleanerT. Andrews Tube cleanerP. Dorsey
Turking
Turbine nozzle. T. Broadbent Turbines. Governing mechanism for mixed-
Turbines, Governing mechanism for mixed-
pressure
Typewriting machineA. G. F. Kurowski
Typewriting machine
pressure. F. Samuelson Typewriting machine. A. G. F. Kurowski Typewriting machine. T. J. Coo Typewriting machine. G. Swenson Typewriting machine. E. E. Barney Typewriting machine. H. H. Steele
Typewriting machine
Umbrella or parasol, Folding. J. J. Daniels
Typewriting machine. E. E. Barney Typewriting machine. H. H. Steele Umbrella or parasol, Folding. J. J. Daniels Under bit and reamer. J. C. Swan Valve. W. L. Osborne Valve. Blast-furnace chipper. A. C. Welfer
Valve
Valve, Blast-furnace chimney A C McKee
Valve, Blow-off
Valve core box, GlobeT. Hawthorne
Valve for gas burners, Pressure-regulating
Valvo Steem oir and water tran
Valve. G. Schmaal et all Valve, Blast-furnace chimney. A. G. McKee Valve, Blow-off. H. W. Jacobs Valve core box, Globe. T. Hawthorne Valve for gas burners, Pressure-regulating J. A. Abrams Valve, Steam, air, and water trap. Valve, Steam, air, and water trap. J. E. Boegen Valve, Straightway. J. L. Halyburton Valve, Supply. N. B. Johnson Vaporizer and burner, Oil. O. A. Makinson Vaporizer and burner, Oil. O. A. Makinson Vault, Grave. J. Young Vehicle caster. J. E. Norwood Vehicle frame. W. Kootz Vehicle indicator. L. M. Tingley Vehicle shock absorber. W. Kootz Vehicle storm shield. J. E. Thompson Vehicle wheel, Spring. H. W. Schmidt Vehicles, Current collector for electrically-propelled. W. Kohler
Valve, Straightway, J. L. Halyburton
Valve, SupplyN. B. Johnson
Vaporizer and burner, Oil. O. A. Makinson
Vault, GraveJ. Young
Vehicle frame
Vehicle indicator I. M. Tingley
Vehicle shock absorber
Vehicle storm shieldJ. E. Thompson
Vehicle wheel, Spring H. W. Schmidt
Vehicles, Current collector for electrically-
propelled. W. Kohler Vending apparatus, Liquid. J. Zill Vending machine. I. F. Harris
Vending machine. I E Harris
Vending machine eoin-controlled mechan-
ism, Automatic
Vending machine, TicketW. F. Tippensee
Ventuator and deflector, Combined
Vertical boiler T. Sugari
Vessel-loading alarm I Gedeon
Vessel-loading alarmJ. Gedeon Vessels, Discharging apparatus for navi-
Vessel-loading alarm
Vessel-loading alarm. J. Gedeon Vessels, Discharging apparatus for navi- gable
Vessel-loading alarm
Vessel-loading alarm. J. Gedeon Vessels, Discharging apparatus for navigable. C. D. Doxford Violin case. J. Gunther Violins, violas, and the like, Tailpiece for J. Bendel Vise, Adjustable dowr. W. T. Kanneder and Vise. Adjustable dowr. W. T. Kanneder at 2000 and 2000 alarm.
Vessel-loading alarm. J. Gedeon Vessels. Discharging apparatus for navigable. C. D. Doxford Violin case. J. Gunther Violins, violas, and the like, Tailpiece for Vise. Adjustable door. W. T. Kennedy et al Voltage regulator. C. P. Steinmetz
Vessel-loading alarm. J. Gedeon Vessels. Discharging apparatus for navigable. C. D. Doxford Violin case. J. Gunther Violins, violas, and the like Tailpiece for Vise. Adjustable door. W. T. Kennedy et al Voltage regulator. C. P. Steinmetz Voting machine. C. H. Ocumpangh
Vessel-loading alarm. J. Gedeon Vessels. Discharging apparatus for navigable. C. D. Doxford Violin case. J. Gunther Violins, violas, and the like, Tailpiece for J. Bendel Vise. Adjustable door. W. T. Kennedy et al Voltage regulator. C. P. Steinmetz Voting machine. C. H. Oeumpaugh Vulcanizer, Portable. C. W. Clough
Vessel-loading alarm. J. Gedeon Vessels. Discharging apparatus for navigable. C. D. Doxford Violin case. J. Gunther Violins, violas, and the like, Tailpiece for J. Bendel Vise. Adjustable door. W. T. Kennedy et al Voltage regulator. C. P. Steinmetz Voltage regulator. C. H. Oeumpaugh Vulcanizer. Portable. C. W. Clough Wagon jack. C. J. Lind
Vessel-loading alarm. J. Gedeon Vessels. Discharging apparatus for navigable. C. D. Doxford Violin case. J. Gnnther Violins, violas, and the like, Tailpiece for J. Bendel Vise. Adjustable door. W. T. Kennedy et al Voltage regulator. C. P. Steinmetz Voltage regulator. C. H. Oeumpaugh Vulcanizer. Portable. C. W. Clough Wagon jack. C. J. Lind Wall construction. J. K. Hoffman
Vending machine. I. F. Harris Vending machine eoin-controlled mechanism. Automatic. H. C. Fleming Vending machine, Ticket. W. F. Tippensee Ventilator and deflector, Combined. T. T. Peddy Vertical boiler. T. Suzuki Vessel-loading alarm. J. Gedeon Vessels, Discharging apparatus for navigable. C. D. Doxford Violin case. J. Gunther Violins, violas, and the like, Tailpiece for Vise, Adjustable door, W. T. Kennedy et al Voltage regulator. C. P. Steinmetz Voting machine. C. H. Ocumpaugh Vulcanizer, Portable. C. W. Clough Wagon jack. C. J. Lind Wall construction. J. K. Hoffman Issued November 1, 1910.

MECHANICAL PATENTS.

Bird guardL. G. Swanson Blower, Positive displacement rotary	(
Bobbin-boring machine. L. C. Baldwin et al	I
Boiler-water-glass shield]
Bottle, Non-refillableP. Vice Bottle stopperE. S. Church Bottle stopperC. J. Stauffiger]
Bowling alley E. Lee Box fastener P. Rauk Brake beam I. B. Hoovland]]
Boiler circulating attachmentT. Barrow Boiler-water-glass shield]
Braking, ElectricE. F. W. Alexanderson]
Bridge J. B. Strauss Bridge safety gate. C. Faust Broom hanger. F. M. Thorpe Bucket. F. Wagner]
Bullot (C. A. Vuenzenmaier et al.]
Bung. P. Heine Burner for combustion under high pressure C. A. Backstrom Burner-starting device. A. A. Ball, Jr. Burnishing machine. C. Pease]
Burton blanks, Apparatus for drilling and counterboring thread holes and cutting]
thread niches in H. J. Skipp Button remover S. E. Burke Cubb burger E. C. Leffries	
Calendar. D. T. Davis Can opener. G. F. Hall Candlestick, Miner's. A. Viera Cap, Winer's. A. A. Sonak	
Cap, Winer's	:
Car compling (2 pats.)	:
Car fender	
Car, Railway dump. A. Campbell Car-scat structure. F. H. Henry	
Car wheel	
Car friction draft rigging, Railway. Car, Railway dump. Car, Railway dump. Car-scat structure. Car wheel. Car wheel. Car wheel. Car wheel. Carousel. Carousel. Carousel. A. G. Reynolds Carpet sweepers, Detachable brush guard for. J. M. Spangler Cartridge, Shot. E. P. Follett Casting anode plates, Machine for. R. Truswell	
Cellulose or pyroxylin compound	
Cement-block moldR. J. Bratton Cement walls, Flask for building	
Cement walls, Flask for building J. C. Joslin Cements, Facilitating and accelerating the hardening of hydraulicL. Hatschek	:
hardening of hydraulic L. Hatschek Ceramic materials, Apparatus for burning	
Chairs, Valve mechanism for dental or other similar	
Checkrein holderP. P. Catalano Cherry-pitting machineS. J. Dunkley Chuck Tapping and drilling J. A. Dalton	
Churn attachmentW. De Vries ChuteJ. E. Brazeal Cignette-holder recentacle J. C. Darst	
Cigarette-holder receptacleJ. C. Darst Circuit-controlling mechanismF. Bechoff Circuit interrupterC. B. Auel et al Cistern-cleaner closureG. T. Moore	
Cheking press	
Clothes-line holder F. Lores	
Clothes-line holder. E. Jonas Clutch and brake operating mechanism. Interconnected. S. B. Fishburne et al Clutch mechanism. W. W. Dryden Cock, Filter-press. N. A. Lockwood	
Cock, Filter-press. X. A. Lockwood Cock, Gage. S. Pattou Coke oven W. W. Peek	
Cock, Gage. S. Pattou Coke oven. W. W. Peck Collapsible box. M. W. Randall Collar protector and fastener, Horse.	
C. B. Deeds Collars, &c., Machine for bending J. K. P. Pine Colloids, Liquitying organic F. Supf	
ntilizing products ofC. A. Backstrom Concrete car structure. Reinforced	
Concrete floor, Reinforced. G. M. Graham Concrete mixer J. Meggers	
Concrete structure, Reinforced	
Concrete structures, Remiorcing frame for	
Condenser. G. Reimers Condiment holder A. J. Beunett Cop tube. F. H. Daniell Corn sheller feeding mechanism W. J. and L. F. Dauner	
Cotton chopper	
Counter and stacker. E. L. Freeman Counter for food and beverages. W. Amenda Coupling. J. Froggatt et al	
Crane, Ladle (2 pats.)C. L. Taylov	
Crauk shaft and bearing therefor E. A. Nelson Cravat holder J. G. Homet Crossing system, Automatic interlocking R. L. Holt Crutch C. L. Jensen et al Cultivator Cultivator attachment J. L. Jenkins Current motor H. Alles Curtain-rod connection F. L. Lathrop Cnshion cap for finger keys H. M. Hay Cutout and switch block holder, Fniversal E. R. Le Manquais Cutter bar (2 pats.) J. H. Poole et al	
Crutch C. L. Jensen et al Cultivator G. W. Davis Cultivator attachment J. Lanking	
Current motor	
Cutout and switch block holder, Universal E. R. Le Manquais Cutter bar (2 pats.)J. H. Poole et al	

			_
C	utter head	Burke	I
I	Dam. Bridge	ottrell Vancil erbeck ined	
I	Cutter headJ, H. Cutting and folding machine Dam, BridgeE. H. C. Devailer, AutomaticM. C. Slod Derrick and traction engine, Comb W. H. M. Desk attachmentA. C. Ke Disinfecting apparatusC. B. Distilling and rectifying apparatus.	Jather ndrick Rider	
I	Polly barC. C	Vallat Kirk	İ
I	Door	woods rmont Caden	
I I	Door	Cleary lerveld darelli	
1	Praft regulator, Time-controlled V. E. Praft rigging, FrictionC. L.	Cozine Bundy	
1	Praft regulator, Time-controlled	Bieber binson	
11111	Dredge, HydraulicW. F. 1 brill-shaping machineF. M. ' brilling apparatusJ. J. Hennessy	Hunter Tucker et al	
llI	Orning and steering means, A. K. B. Ornin, G. W. Du Ory pan (2 pats.) R. C. F	altezor Laný Penfield	
l I I	Oust-separating tankB. Oye, Green azoW. Bo Oyeing, Packaging yarn for	Lobee ergdolt	
l	Earthworking machineC. F. Se Egg beaterE. M.	et ai chaupp Jorgan	
I	Dye, Green azo	gomery remble IcLeod	
I I	Electric machine speed regulation, D	ynamo enshaw Sawin Scott	
l	Electric-machine speed regulation, D. C. Re Electric meter	or the in. Jr. Bissell	
]	Electrically-heated boilerC. A Electrode for arc lamps. E. R. Berr Electrode for electric arc lights	talborg y et al	
ļ	Electrolytic cell G. C. Landis Electrotype-curving machine W. W. Mc	et al	
	Elevator	Schwab Varreu ohnike	
J J	Emergency brake T. Jone Engine starter, Hydrocarbon, J. B. Engine stop F. Hem	r et al s et al Runner nebolde	
]	Engines, Cranking device for intern	al-com-	
]	bustion C. I Envelop W. S. Envelop machine A. J. Acl Evaporator, Maple-sap S. I Exercising machine C. S. Exhibiting apparatus F. W. Explosive engine W. J. Eyeglass reel G. I Eyeleting tool C. L. Fare register J. F. Felly-joint bridge A. Fencing grip, Woven-wire A. File cabinet W. A. File cabinet E. G. Sampso Filter, Gasolene or oil G. T. Re Fire escape door, L. R. Loughly	R. Hall Brown kerman	
]	Evaporator, Mapie-sap	Daniels Schulze Tully Wright	
]	Eyeglass reel. G. I Eyeleting tool. C. L. Fare register. J. F.	I. Đay Eaton Ohmer	
	Felly-joint bridgeA. Fencing grip, Woven-wireA. File cabinetW. A. File bolderE. G. Samuso	Lawrie Knodle Harris n. et. al	
]	Filing machine E. Filter, Gasolene or oil G. T. Re Fire escape J. H. H.	Curtis Pynolds Logston	
]	Fire escape door L. R. Loughly Fire extinguisher, Chemical. W. S. Fire plug, Drum G. E. Hars Fish, &c., Device for opening and	orough Tiffany greaves	
]	the months of	lleefson zeefson stwood nachine	
]	the months of M. I Fishing tool, Electric	Morgan Haring hairs,	
	Fluid-pressure motorD. S. Flying machinel. L.	Wangh Crane	
	Flying machine steering mechanism	Bostel mphrey	
	Furnace	Carter amilton Stivers	
	Game apparatus, RaceJ. G Garden implementS. C Garter	oodwin Thomas Ingalls	
	Gas-collecting mains, Automatic pregulator forO. F. Gas economizer and purifier	ressure Greim	
	Force drill, Portable	rpenter Regu- Cross	
	Gelatin compositionE. F. Glass paues in position, Meaus for ingJ.	Felsing seenr- Knoerl	
	Gas igniter, Automatic. E. E. Gas regulator. L. H. Gearing. C. A. Gelatin composition. E. F. Glass paues in position, Meaus for ing. J. Governor attachment, Engine	Giltner ndholm mech- L. Boda	
	Grinder for irregular surfaces	s et al Green	
	Gun mountD. J. Car Hammers, Valve gear for power. J. H HangerL	twright amilton Roelum	

Cutter headJ. H. Burke	HarrowD. L. Powers	Nut lockE. V. Brister
Cutting and folding machine	Harrow, Disk (Reissue)F. B. Niesz	Nut lockJ. Burgert et al
Dam. BridgeS. A. Vancil	Harvester attachmentO. O. Clark Harvester, CornJ. Tjossem	Nut loekJ. Burkhart Oil burnerR. J. Wheeler et al
Derailer, AntomaticM. C. Sloderbeck	HatpinA. Larsen	Oil burnerA. H. Forstner
Derrick and traction engine, Combined	HatbandO. W. Schofield Hay rakeJ. Dain	Oiler for automobiles, Sight-feed
Desk attachmentA. C. Kendrick	Headlight steering gear, Vehicle	Olefin or saturated acids, Obtaining
Disinfecting apparatusC. B. Rider Distilling and rectifying apparatus	Heating apparatus, SteamJ. A. Donnelly	Opera chair
R. Vallat	Heating device, ElectricC. Aalborg	Orange-sizing machineJ. W. Stevenson
Dolly bar	Heating system	Ore concentrator or separator
Door	Heating tools electrically, Apparatus for	Packing, RodT. Smith
Door and means for operating same F. D. Ogden	Heddles, MakingW. Fehr et al	Paper-bag machineA. L. Parrish Paper-trimming machineW. H. Smith
Door opener	Heel-compressing machineT; Lund	Paring machine, AppleW. H. Bontell
Door support, DisappearingA. Vanderveld Down spoutE. Cardarelii	Heel-trimming machine, Boot and shoe W. T. B. Roberts	Pasting or gumming machineJ. W. Stocker
Draft regulator, Time-controlled	Hinge A. Hughes, Jr.	Patterns, Apparatus for eutting paper,
Draft rigging, FrictionC. L. Bundy	Hinge	eloth, or similar E. Pignone Penholder B. F. Lewis
Draft sillJ. J. Irvin	Hoisting apparatus	Perch, Chicken
Drain for buildings, WaterF. S. Bieber Drawing instrument, Curve	Hoisting apparatusW. H. Beam Fotel-corridor lockN. B. Hurd	Phonograph-record trimmer. J. D. Rockhill Photographie prints, Apparatus for washing
L. F. Robinson	Hnb. Vehicle-wheelR. L. Harrell	
Dredge, Hydraulic	Hurdle	Pianos, Coin-controlled actuating mechanism for auto-pneumaticE. D. Carney
Drilling apparatusJ. J. Hennessy et al.	Hydrocarbon mixtures, Producing and	Pincers, Lasting (2 pats.),G. O. Barbons
Drilling machineJ. W. Lundgren Driving and steering meansA. K. Baltezor	burning combustibleR. II, White Ice, Apparatus for the manufacture of	Pipe and nut wrenchP. Masterson Pipe attachmentA. J. Tizley
DrumG. W. Du Lany	plate	Pipe joint
Dry pan (2 pats.)R. C. Penfield Dust-separating tankB. Lobee	Ice-cream freezerR. C. Eldridge et al Ice-making machineW. M. Pruett	Pipe union
Dye, Green azo	Incubator alarm	water and otherI. G. Fosler
Dyeing, Packaging yarn for	Indicating and recording mechanism T. M. Foote	Planter marking device, Seed. L. N. Todd Plow (2 pats.)
Earthworking machineC. F. Schaupp	Ingot mold E. Gathmann	Plow attachmentO. Hatfield
Egg beaterE. M. Morgan Electric currents, Rectifying	Insole, Electric	Plow fender adjusterC. W. Williams Plow, GangW. J. Paul
	Insulator for high-tension transmission sys-	Plow, Motor-propelledA. K. Baltezor
Electric generator and motorD. Kremble Electric-light hangerN. McLeod	temsJ. E. Noeggerath Insulator, StrainL. Steinberger	Plow point, AdjustableN. L. Olson Plow, RotaryD, C. Ruth
Electric-machine speed regulation, Dynamo	Insulator supportW. R. Thompson	Pneumatic-despatch apparatus, Sending
Electric meterG. A. Sawin	Internal-combustion engine, J. W. Akerman Ironing board,J. D. St. Pierre et al	mechanism forH. D. Waterhonse Pneumatic-despatch systems, Receiving ap-
Electric switch	Journal-bearing mold (2 pats.)	paratus for
distribution ofJ. Fountain, Jr.	Justifying mechanismB. F. Bellows et al	H. W. Stowe
Electrical compling	Knife-blade-hardening apparatus E. Broking	Pocket case
Electrode for arc lamps, .E. R. Berry et al.	Knitted web hoisery, and making the same	
Electrode for electric arc lights	Knockdown case	Portable houseR. R. Brewer Post cap and timber seatO. R. Schrader
Electrolytic cellG. C. Landis et al.	Knnckle-pin retainerC. F. Murray	Poultry duster, AutomaticP. C. Fish
Electrotype-curving machine	Labeling machines, Feed-controlling means forF. O. Woodland	Power plant
Elevator	Lace-feeding deviceW. H. Joslin et al	speed
Elevator safety applianceA. C. Mohnike	Ladder, Portable extensionW. II. Beam	Pressure-fluid engine
Elevator safety device	Lamp and guard therefor, Portable R. B. Benjamin	PrintingL. R. Kantuer Printing and auditing machine, Ticket
Emergency brake	Lamp, Antomatic gas	J. F. Olimer
Engine starter, Hydrocarbon. J. B. Runner Engine stopF. Hennebolde	Lamp, Electric glowII, Remane et al Lamp fixture	Printing and folding papers, Apparatus forJ. A. Boyce
Engines, Composition of matter for prevention and removal of incrustation in ex-	Lamp, Household safetyR. L. Victor Lamp, Miner'sD. Miglio	Printing apparatus
plosiveE. W. Caulfield	Lamps, Gas-burner attachment for oil-burn-	Printing machine
Engines, Cranking device for internal-combustion	ing	Printing rule and system of applying the same to printing forms
Envelop	Lantern guard	A. G. Stevenson
Envelop machine	Latch	Propeller wheelJ. Bennett Propellers, &c., Blade-feathering mechan-
Exercising machine	Lawn and hedge trimmerG. G. Frazer	ism forII. IInckel
Exhibiting apparatusF. W. Tully Explosive engineW. J. Wright	Legging	Prining implementJ. B. Howard Pulp screenJ. Olsen
Eyeglass reelG. H. Pay Eyeleting toolC. L. Eaton	Life-saving attachment for submarines S. S. Peterson	Pump, AirJ. J. MeIntyre Pump and compressor, Centrifugal
Fare registerJ. F. Ohmer	Lifting jack	H. F. Benson
Felly-joint bridge	Lighting apparatus, &c., Coupling for the operating chains ofT. M. Harrigan	Pump, Direct-actingP. F. Oddie Pump driving gearJ. W. Mver
File cabinet	Lightning arrester	Pump for oil and like wellsC. W. Bell
File holderE. G. Sampson et al Filing machineE. Curtis	Lightning rodE. J. Kress Linotype machines, Cleaning attachment	Pump, injector, or the like
Filter, Gasolene or oilG. T. Reynolds	for space bands of	Prizzle or toyV. D. Dixon Quick couplingW. II. Leonard
Fire escape doorL. R. Loughborough	Lock system	Badiation calculatorP. F. Brown
Fire extinguisher, Chemical. W. S. Tiffany Fire plug, DrumG. E. Hargreayes	Locking device, FrictionalJ. G. Jones LocomotiveB. C. Ball	Rail fastener
Fish, &c., Device for opening and holding	LocomotiveG. J. Hatz	Railway block systemC. W. Spernader
the months ofM. Leefson Fishing tool, ElectricH. Eastwood	Looms, Electromechanical warp stop motion forJ. F. Dustin	Railway-rail fastenerJ. M. Blake Railway signalJ. J. Cozzens et al
Flanging plates, Method of and machine	Loss-preventing deviceS. L. Kimmel	Railway switch, Automatic
for	LubricatorA. D. Williams Mail-bag delivererO. Howard	Railway tie
Floss and waste silk, Destruction of hairs, &c., in	Mail cabinet	Railway weed cutterR. Whitty et al Ram, HydranlicA. Abraham
Flower holder	Mail-ponch receiving and delivering appa-	Ram. Hydranlie
Fluid-pressure motorD. S. Wangh Flying machineL. L. Crane	rathsA. Hupp Mailing folderC. F. Jenkins	Razor, Safety. H. Clauss Receptacle. A. H. F. Perl
Flying machine steering mechanism	Malted preparations from cereals, Manufac-	Recording deviceW. II. Pratt Reflector for store windows and the like
Folding seat	ture of L. C. Reese Massaging implement A. M. Dunder	T. Gargs
Force drill, PortableC. W. Wilson FurnaceE. C. Carter	Measuring implementS. T. Derbyshire Meat holderG. L. Stark et al	Refrigerator
Game apparatus	Metal press, HydranlicJ. T. J. Seifert	Registering apparatus
Game apparatusJ. M. Stivers Game apparatus, RaceJ. Goodwin	Metal-reducing processF. W. Gordon Metal structural work, Testing and mark-	Registering mechanismA. J. Diescher
Garden implementS. Thomas GarterC. F. Ingalls	ing	Rim, DemonstableE. J. Estey Roller mills, Pressure-regulating device for
Gas burner	Meter-setting meansE. H. Ford	D. R. Bowen
Gas-collecting mains, Automatic pressure regulator for	Milk can	Rolling mill
Gas economizer and purifier	Mines. Undercutting inF. Billings	Rotary turbine engineJ. Blacker
Gas generating and supply systems, Regu-	Mining machineA. U. Davis Mixing and Inbricating device	Rngs during finishing, &c., Holder for A. C. Schoen
lator for F. L. Cross Gas generator E. Brauss		Sad iron, ElectricalW. A. Brann Sash-fastening deviceJ. Jaksiek
Gas igniter, AutomaticE. E. Gerald	MoldP. M. McNabb	Sash holder and lockK. Narahara
Gas regulator	Molding and baking machine	Sausage, Making fishM. F. Hahn Saw machine, DragF. A. McKee et al
Gelatin compositionE. F. Felsing	Mop wringer	Sawing circles, Machine for
Glass paues in position, Meaus for seemingJ. Knoevl		Scaffold bracketJ. C. Snyder
Governor attachment, Engine	Motive-power-producing apparatus	Scaffold, PortableA. II. McGhan Scrapers, Holding device for resetting
Grader, RoadV. Landholm	Motor control	J. B. Cathy Screen J. B. Hoagland
Grain binders, Compressor and trip mechanism for	Motor control, ElectricH. D. James Motors to keep in step with the waves or	Seed delinter, CottonC. F. King
Grinder for irregular surfaces	impulses of the current driving them and a motor embodying the process, Com-	Seeds to separate unripe from ripe seeds. Treating eacaoM. F. Kassmodel
Gun-firing mechanism,	pelling electricJ. J. Montgomery	Self-cleaning rake
Gun mountD. J. Cartwright Hammers, Valve gear for power	Multiple-key lockJ. J. Murphy Nozzle or sprinkler head, Rotary distribut-	Self-heating ironJ. Heilbron Sewer connectionW. E. McCorquodale
J. Hamilton HangerL. Roehm	ing	Sewing machine, Hook-and-eye
	The state of the s	

Nut lock. Nut lock. Nut lock. Oil burner. Oil burner. Oiler for automobiles. Olefin or saturated ac	E. V. Brister
Nut loekOil burner	J. Burkhart .R. J. Wheeler et al
Oil burner Oiler for automobiles	A. H. Forstner Sight-feed
Olefin or saturated ac	eids, Obtaining
Opera chair	G. R. Parr
Ore concentrator or	separatorG. C. Kidder
Packing, Rod	T Smith
Paper-bag machine Paper-trimming machine Paring machine, Apple Pasting or gumming r	eW. H. Bontell
Paring manine, Apparatus Patterns, Apparatus eloth, or similar Penholder. Perch, Chicken Phonograph-record trip Photographie prints, A	for eutting paper.
eloth, or similar, Penholder	E. Pignone B. F. Lewis
Perch, Chicken Phonograph-record trip	mmer. J. D. Rockhill
Dianos Coin controllo	A actuative machan
ism for auto-pneum Pincers, Lasting (2 pa Pipe and unt wrench Pipe attachment	aticE. D. Carney ts.)G. O. Barbone
Pipe and unt wrench Pipe attachment	P. MastersonA. J. Tizley
Pine polit	
Pipes, Automatic pre water and other Planter marking devic Plow (2 pats.)	I. G. Fosler
Plow (2 pats.) Plow attachment	R. M. Kelly
Plow fender adjuster. Plow, Gang	C. W. Williams W. J. Paul
Plow, Motor-propelled, Plow point, Adjustabl	eN. L. Olson
Plow, Rotary Pneumatic-despatch	apparatus, Sending
Plow (2 pats.). Plow attachment Plow fender adjuster. Plow, Gang Plow, Motor-propelled. Plow point, Adjustabl Plow, Rotary Pneumatic-despatch mechanism for Pneumatic-despatch sy paratus for	stems, Receiving ap-
Pneumatic-despatch sy paratus for	m for eovering leaf
Pocket case Polychrome sereen an	A. Franke d making the same
Portable house Post cap and timber Poultry duster, Auton	C. L. A. Brasseur R. R. Brewer
Post cap and timber Poultry duster, Auton	seatO. R. Schrader naticP. C. Fish
Power pant Power-transmission n	nechanism, Variable-
Power-transmission n speed	eviceT. J. Levey
Printing and auditing	machine, Ticket
Printing and folding	J. F. Olimer
Printing apparatus	J. A. Boyce W. A. Pringle
Printing apparatus Printing machine Printing machine Printing rule and sys	G. E. Read
same to printing to	1 III 8
Propeller wheel Propellers, &c., Bladism for. Pruning implement Pulp screen. Pnmp, Air Pump and compresso	e-feathering mechan-
Puln sereen	J. B. Howard
Pump, Air Pump and compresso	J. J. MeIntyre
Pump, Direct-acting,	H. F. Benson P. F. Oddie
Pump driving gear Pump for oil and like	e wellsC. W. Bell
Pugglo or tor	G. J. O. D. Dikkers
Quick coupling Badiation calculator.	W. II. Leonard P. F. Brown
Rail fastener Rail fastener	E. H. Case et al
Railway block systen Railway-rail fastener	1C. W. Spernader J. M. Blake
Railway signal Railway switch, Auto	omatic
Railway tie Railway weed cutter.	J. M. Weisel
Ram, Hydranlic Ram, Hydranlic	A. AbrahamJ. R. Thompson
Razor, Safety Receptacle	A. H. Clauss
Recording device Reflector for store w	indows and the like
Refrigerator Refuse-destructors, M	
Registering apparatus	II. N. Leask sH. Hollerith
Registering mechanis Rim, Demonntable	
Rolling mill	e-regulating device forD. R. Bowen
Rotary engine Rotary turbine engin	
Rugs during finishing	e-regulating device for D. R. Bowen J. Fawell J. Harris J. Blacker J. C. Schoen W. A. Brann J. Jaksick K. Narahara M. F. Hahn J. A. MeKee et al
Sad iron, Electrical Sash-fastening device	W. A. Brann J. Jaksiek
Sash holder and lock Sausage, Making fish.	
Scaffold bracket Scaffold Portable	J. C. Snyder
Scrapers, Holding de	vice for resetting J. B. Cathy
Screen	P. L. Morgan et al. J. C. Snyder A. H. McGhan evice for resetting. J. B. Cathy J. B. Hoagland L. C. F. King nipe from ripe seeds. M. F. Kassmodel A. S. Hess J. Heilbron W. E. McCorquodale ok-and-eye.
Treating eacao	M. F. Kassmodel
Self-heating rake Sewer connection	J. Heilbron
Sewing machine, Ho	ok-and-eye

Shade holder
Sheet-feeding deviceP. Hartmann Sheet-metal beading and flanging machine
Shirt sleeve
Shoe-machine jackE. A. Stiggins Shoe-polishing machineL. I. Minato ShuttleW. G. Peet Shuttle tension deviceJ. E. Thayer
Shuttle tension deviceJ. L. Dow Sign, Eyeleted enameled E. Richardson Sign, Illuminated W. H. Ingle Signaling lens W. Clurchill
Skewer. G. L. Stark et al Skirt marker. C. A. Rittman Skylight construction. J. D. Thompson Sled brake. E. Hollingsworth
Slotting and shaping machineJ. Riddell Sluice boxJ. J. Barker Small arm, Semi-automatieN. Pieper Smelting oreF. T. Snyder
Sled brake. E. Hollingsworth Slotting and shaping machine. J. Riddell Slufee box. J. J. Barker Small arm, Semi-automatie. N. Pieper Smelting ore F. T. Snyder Smoke-bell support. J. T. Owens Smoke-eonsuming furnaee. G. E. Wells Snow handling and removing means Spike J. L. Jossart
Spinning apparatus, Traverse motion for
Spool, JackJ. C. Hebden et al Spool of pasteboard, cardboard or similar materialA. Schmidt Spraying apparatusS. Trudeau
Spraying apparatus M. B. Brooks Spring wheel . E. W. Jenkins Spring wheel . L. Blessing Spring wheel . G. E. Gavon
Spinning paper threads, Machine for
Stamping and punching machine
neader for
Steam engine
Stove. E. Kener, Jr. Stove. J. M. Merritt Stoves, furnaces, and other heating apparatus, Air-heating chamber for R. Max
ratus, Air-heating chamber for R. Max Street indicator. H. E. Fisher Street sprinkling or flushing wagon J. Ganey Stretching frame J. J. Robinson
Street sprinkling or flushing wagon J. Ganey Stretching frameJ. J. Robinson Stuffing boxes, Apparatus for packing and unpackingA. Meier et al Subway ventilatorG. W. Jackson Surgical bandage (2 pats.)E. M. Pond Surveyor's reelW. W. Morgan Switching device, Fluid-pressure-controlledC. Aalborg SyringeF. Schwartz et al Tables, Extension shelf for writing J. F. Bebb
Switching device, Fluid-pressure-controlled C. Aalborg SyringeF. Schwartz et al Tables, Extension shelf for writing J. F. Bebb
Telegraphy, Automatic
Telephone-receiver holder II. M. McAlarney Tent' frame Tentering machine Torrepringle connection G. Huebner Terrepringle connection G. Thiomagner Torrepringle connection O. Thiomagner The phone-receiver holder G. Huebner Terrepringle connection O. Thiomagner Terrepringle connection Terrepringle connection
Theatrical apparatus. J. F. Sullivan Thermo electrostat. R. W. King Thermograph and hydrograph, Combination
Thermostat, Pneumatic C. E. Bonnet Thill coupling J. F. Jaquet Ties, Metallic support for wood J. H. Weidman
Ties, Method of and apparatus for forming rail seats inW. II. Morgan Time indicatorG. I. Bodine, Jr. Tin from tinplate waste, Removing
Tables, Extension shelf for writing. J. F. Bebb Telegraphy, Automatic. G. T. Kanzer-Chegodard Telegraphy, Wireless. R. A. Fessenden Telephone apparatus. G. Babcock Telephone-receiver holder. II. M. McAlarney Tent frame. G. Huebner Tentering machine. J. J. Hoey Terminal connection. O. Thieme Theatrical apparatus. J. F. Sullivan Thermo electrostat. R. W. King Thermograph and hydrograph Combination A. G. McAdie Thermostat, Pneumatic. C. E. Bonnet Thill coupling. J. F. Jaquet Ties, Method of and apparatus for forming rail seats in. W. H. Morgan Time indicator. G. I. Bodine, Jr. Tin from tinplate waste, Removing. Lin Brandenburg Tire and rim, Vehicle wheel. S. L. Simpson Tire, Cushion. E. C. Shilling Tire-fastening device. W. B. Owen Tire-lealing compound. H. S. Griswold
Tire-healing compound
Tool, Fluid-pressure-actuated impact G. H. Gilman Top, SpinningC. B. Winzer Toy paracluiteM. E. Wright
Track braceC. Maunders Traction switch, AutomaticJ. L. Yoder Traction wheelJ. Oeste Traction-wheel drive, MagneticA. Sundh
Tire-healing compound. H. S. Griswold Tire, Vehicle. A. Crowe et al Tires, Tread for pneumatic. J. C. Schleicher J. C. Schleicher J. C. Schleicher Gol, Fluid-pressnre-actuated impact. G. H. Gilman Top, Spinning. C. B. Winzer Toy parachute. M. E. Wright Track brace. C. Maunders Traction switch. Automatic. J. L. Yoder Traction wheel. J. Oeste Traction-wheel drive, Magnetic. A. Snndh Tramway. Aerial. W. C. Lawson Transformer. M. Mayer Transmitting apparatus. F. W. Midgley Trolley. G. A. Miller Trolley harp. W. W. Stewart Trolley wires by means of the eatenary system. Bridge for supporting. R. L. Allen
Trolley wires by means of the eatenary system. Bridge for supportingR. L. Allen Truck-brake attachment, WarehouseJ. Jones
Truck-brake attachment, Warehouse J. Jones Truck, Casket

Turbine, Elastic-fluidC. A. Blackstrom Turbine governorF. W. Bentley
Turbine nozzle
Turbine nozzleT. Bell Turbine vane and wheelD. Kemble Turpentine separatorD. B. Sphaler et al TypewriterL. B. Martin
Typewriter carriage-feeding mechanism
(2 pats.)
Typewriter
Typewriter ribbon operating and feeding mechanismJ. Alexander
Typewriting machineT. J. Coo Typewriting machineR. W. Uhlig
Typewriting machine
Typewriting machineJ. T. Sehaaff Typewriting machine(' H. Shenard
Typewriting machineA. W. Steiger Typewriting machineC. F. Lundeberg
Typewriting machineC. A. MacDermott UmbrellaF. W. Rotzell
Urinal stall
ValveF. J. Matchette et al. ValveII. F. Ouickel
Valve, AutomatieJ. B. Perkins Valve, EngineC. Reeves
Valve for pneumatic cleaning tools, CouplingF. J. Matchette et al
Valve, Globe A. L. Kerbaugh Valve Piston D. F. Stayman
Vapor generator, Saturated or superheated G. Voegeli
Vegetable washerS. A. Mascia VehicleA. M. Bollinger
ably supporting
Vehicle, Motor (2 pats.) C. A. Carlson Vehicle-spring support E. D. Toops
Vehicle wheel. E. J. Estey Veneering. H. C. Hiscock
Washing machineT. S. Patterson Washing and everflow Parin W. F. Hinsdale
Watch dial foot. W. C. Ball Water meter. E. E. Gamon
Water motor. L. M. Wilber Wave motor. T. La Brum
Weather strip for doors H. L. Davis
Web press, Rotary
Well-drilling deviceJ. S. Stewart Well hookA. Soss
Wheel removable rim, Vehicle, A. N. Hood
Wheel barrow attachmentW. C. Johnson Wick gageG. A. Ritzler
Windlass
Typewriter paper-feed attachment
Wire-drawing machineH. E. P. Taylor Wire stretcher. A. A. Boe
Wire stretcher. A. Green Wire stretcher. J. H. Lewis
Wireless apparatus. F. G. Sarreut Wood lamina, Expanded. A. M. Stoltey Woodworker's prose for glood work
Window screenF. L. Michae's et al Wire cable, socket, and coupling C. Stevenson Wire-drawing machineH. E. P. Taylor Wire stretcherA. A. Boe Wire stretcherA. Green Wire stretcherJ. H. Lewis Wireless apparatusF. G. Sargeut Wood lamina, Expanded. A. M. Stoltey Woodworker's press for glued workJ. M. Darr Wrapping machineL. H. Wilbur WrenchW. W. Case WrenchJ. A. Asen WrenchJ. A. Morris WrenchJ. A. Morris WrenchJ. A. Morris WrenchJ. A. Trambley Writing machine cushion-keyH. M. Hay Yoke, NeckD. C. Bowers
Wrench W. W. Case Wrench J. Aasen
Wrench (2 pats.)J. A. Morris Writing machine englishes. H. M. Hay
DESIGNS.
ApronM. A. and J. S. Mulligan Label blankH. Furste Mirrors, brushes, or similar toilet articles, Back forG. H. Rerry PineushionG. Milligan
Back for G. H. Berry Pineushion G. Milligan

ApronM. A. and J. S. Mulligan
Label blank
Mirrors, brushes, or similar toilet articles,
Back for
PincushionG. Milligan
Plate or similar article
A. A. Blaukenmeister
Stove
Stove, HeatingJ. S. Van Buron
Trimming

Issued November 8, 1910.

MECHANICAL PATENTS.

Acid, Formic
Adding and listing machineW. Schooling
Adding and recording machine
G. W. Dudley
Adding machine
Aeroplane, InflatedA. E. Maiden
Agricultural implementJ. P. Baldwin
Agricultural implement, Combination
N. Raez
Air compressor
Air compressorJ. and A. H. Hanna
Air regulator
Airships, Car suspension for
G. A. Crocco et al
Aların system
Animal trap
AnticreeperJ. Player, Jr.
Antimony from ores and the like, Recover-
iugJ. R. Masson
Antiskidding device for tires
J. E. Redmond
Auger, Earth
Automobile driving gear
Automobile driving gearJ. A. Scharf
Automobile hoodJ. P. Gordon
Automobile radiator
Automobile radiatorJ. Fleischman
Automobile runnerT. Milldown

Antoplane
Antoplane
Bagasse, TreatingT. J. Hutchinson Barinm hydroxid, Making anhydrons
.C. Rollin Barinm oxid, Making
Barrel, Metal F. E. Firth Baths, Hammock for douche and similar
Bearing, Roller,, W. E. Lamb Bearing, Roller,, W. B. Bary
Bed-cover norder
Belt protector A. A. Ellis Belt shifter B. M. W. Hanson Bicycle carrier C. M. Starr
Binder, Loose-leatL. F. Scherzinger Binder and loose-sheet holder, Temporary
Boiler cleaner, Mechanical A. C. Clark Boilers, Means for regulating pressure in
Boilers, Mold for baffle-wall construction for G. W. Laugton
Baths, Hammock for douche and similar. G. L. H. Burger Beam and trace connection W. E. Lamb Bearing, Roller
Bottle washer neck-cleaning device W. Penman W. Penman J. H. Carfer Boxes and the like Corner-trimming ma- chine for. H. W. Morgan Brake beam. C. F. Huntoon Brick kiln. W. T. Hnrd Brickmaking apparatus. J. P. B. Fiske Broom holder. C. H. Sorensen Brush. J. B. Rose Brush, Fountain toilet
Brake beam C. F. Huntoon Brick kiln W. T. Hard Brickmaking apparatus J. B. Ekster
Broom holder. C. H. Sorensen Brnsh. J. B. Rose
Bucket, Dunping
Bucking apparatusE. Bonnin Bungs, &c. Handle forR. and A. M. Stock
Brush. J. B. Rose Brush. Fountain toilet. W. T. Schaefer et al Bucket, Dumping. A. W. French Bneking apparatus. E. Bonnin Bungs. &c. Handle for. R. and A. M. Stock Button, Cuff. H. R. Kohlweyer Calcium carbid, Treatment of. C. C. Wakefield Calculating machine. F. Trinks Calendar, Perpetual. S. L. Berry Camera. O. W. Plant Can closure. O. Becher Car and tool-driving machine. Track. H. W. Jacobs Car and wagon feeder F. L. Simpson Car bolster side bearing. C. L. Schwartz Car-coupling-operating attachment. F. Horn Car door
Calculating machine F. Trinks Calculat, Perpetual S. L. Berry
Can closure
Car and wagon feeder. F. L. Simpson Car bolster side bearing. C. L. Schwartz
Car-coupling-operating attachmentF. Horn Car doorC. M. Christensen
Car-door fastener. J. Ganthier Car-door-locking device. C. W. Bitner Car step and cate Combination R. Capra
Car door fastener
Carbonizing A. F. Rockwell Carbonizing apparatus A. F. Rockwell Carbonizing apparatus
Carbureter
Carrier for compressed fibrons materials C. II. Merry Cash register E. S. Church
Cash registerW. H. Muzzy Casting metalC. H. Upson Cement-block machine. H. E. Baker et al
Cement-block-molding machine
Cement-block-molding machine. R. J. Hamilton Chain coupling. J. M. Brown Chair. M. B. Williams Chart or guide. Color. E. W. Fairchild Chuck. J. A. Lelaud Churn. T. J. Jarnagin Churn apparatus, Vacuum. T. Berntson Clasp. R. Nelson Clasp. S. Zeugschmidt Clap or buckle. D. Kops et al Clay loader and scraper. W. A. Mohrbaeh Cleaning apparatus.
Churn T. J. Jarnagin Churn apparatus, VacuumT. Berntson
Clasp. S. Zengsehmidt Clasp or buckle. D. Kops et al
Clay loader and scraper. W. A. Mohrbaeh Cleaning apparatus
Closure-locking meansC. J. Ljuuggren Cloth-treating apparatusD. Gessuer Clutch, FrietionJ. A. Fridgen
Clutch, Motorcycle friction . J. R. Spangler Coal-loading device R. M. Fox Coaling device V. Anderson
Clutch, Friction
Collapsible box. F. Pinto Color shades, Device for finding harmonic.
Compressor or the like, Rotary
Concrete form, Adjustable, R. B. Higgius Concrete form, Adjustable,
Concrete structure, Reinforced
Conduits and tunnels, Apparatus for making J. P. Grohs Controlling device
Convertible chair. M. Shalansky Conveyer. W. J. Turnbull Conveyer. Truck J. W. Beno
Collapsible box. F. Pinto Color shades, Device for finding harmonic. C. Schnebel Compressor or the like, Rotary. W. von Pittler Concrete-block-making machinery. S. Allen Concrete form, Adjustable, R. B. Higgius Concrete form, Adjustable, R. B. Higgius Concrete form, Adjustable, R. B. Higgius Concrete structure, Reinforced. H. E. White et al Conduits and tunnels, Apparatus for making L. P. Grohs Controlling device. J. E. Radican Convertible chair. M. Shalansky Conveyer. W. J. Turnbull Conveyer, Truck. J. W. Beno Cooking utensil. F. O. Rollins Copper from ore, Extracting, W. L. Austin Cork extractor. F. L. Norman Corn husker (3 pats.) T. I. Ludwig Corn turner. C. I. McCreery Crate or box, Collapsible. F. E. Sterrett Cream, Guard for receptacles for whipping
Corn husker (3 pats.)T. I. Ludwig Corn turner
Cream, Guard for receptacles for whipping N. M. Doberty
Cultivator
Crate or box, CollapsibleF. E. Sterrett Cream, Guard for receptacles for whipping
Dead lock and latch, Combined
Dental floss holder

Dial, Memorandum. Directory, Telephone. Disk support. Disk support. Display stand or case, Distillate-barning appara Distillation of coal and it products, Apparatus fo R. Door lock, Emergency of Poor lock, Sliding. Poor-locking device. Doors, Draft excluder fo Double-acting self-feedin Dredger bucket. Drill-cylinders, Front her Drill feed. Drums, Method of and noing rotary. Dry news (2 nots)	J. S. McQuins W. G. Frenc
Disk support Display stand or case,	,C. S. Skinne Folding
Distillate-burning appara	M. J. Wrem
Distillation of coal and t	C. J. Duff et a be recovery of the
products, Apparatus fo	r the
Door lock, Emergency e	Xit
Door lock, Sliding	. F. W. Hettwe
Doors, Draft excluder for	rr. S. Crantre orG. Gotte
Double-acting sen-reguli	g driii
Drill-cylinders, Front Inc	C. M. Hicke; ad for
Drill feed	G. S. Powe W. H. Green
Drums, Method of and n ing rotary	reans for support $\dots \Lambda$. B. Helbis
ing rotary Dry pan (3 pats.). Dust collecting and separ	R. C. Penfield rating apparatus.
Dyeing machine, Collansil	C. II. Stuble; ble-revolving-beam
Dyeing machine, Collapsil vacuum. Dyeing machines, Ribbed beam for. Earth drill. Egg stamp. Elbow-bending machine. Electric machines and tl dynamo. Electrical connector. Electrical coupling and	F. M. Morton
beam for Earth drill	F. M. Morror
Egg stamp	II. C. H. Walet
Electric machines and the	ie like, Brush fo
Electrical connector	J. J. Burn
Electrical booton and	R. H. Wapple
in the form of textiles	M. Hefte
cles by Produc	ing metallic arti ,F. I. Gibb
ratus for	Receiving appa E. II. Smyth
Elevator controller Elevator-controlling device	W. D. Baldwii eC. Barnun
Electrical connector. Electrical coupling and Electrical heater and magin the form of textiles Electrodeposition, Producties by. Electromagnetic waves, ratus for. Elevator controller. Elevator mechanism. Elevator safety device. Engine base. Engine cylinder.	J. W. Pogu
Engine base Engine cylinder	A. B. Schult
Engine safety stop, Sawn	nillA. C. Dear
Engine cylinder. Engine safety stop. Sawr Engine starting device Engine starting mechani Engines, Manifold for in	sm, Exidosive
Engines, Manifold for in	iternal-combustion
Engines, Method of and	apparatus for op
Explosive.	L. Gra
Explosive compound Explosive engine	.II. C. II. Musta
Extensible bracket Eyeglass trame	H. Nopp W. E. Clark
Eyeglasses Fabric	G. J. Lowre
Fastener, Metallic	.J. W. McKitrich
Fastener, Metallic Fat from effluents, Appar	.J. W. McKitriel G. W. McGil atus for removing
Fastener, Metallic. Fastener, Metallic. Fat from effluents, Appar Faucet. Faucet	J. W. McKitric G. W. McGil atus for removin: R. Schillin; W. L. Heuse F. Gruschov
Fastener, Metallic Fastener, Metallic Fat from effluents, Appar Faucet Faucet Fifth wheel, Wagon	J. W. McKitric, G. W. McGil attus for removin; R. Schillin; W. L. Heuse F. Gruschov W. A. Underbil
Engines, Manifold for in Engines, Method of and erating gas. Explosive compound. Explosive compound. Explosive compound. Explosive congine. Extensible bracket. Eyeglass frame. Eyeglasses. Fabric. Fastener. Fastener. Fastener. Metallic. Fat from effluents, Appar Faucet. Faucet. Fifth wheel, Wagon. Filements, Making including.	J. W. McKitric, C. W. McGil Catus for removin: C. R. Schillin; W. L. Heuse C. F. Gruschov W. A. Underbil andescent-electric H. C. Parke
Finishing tool	J. A. Hes E. Traul
Finishing tool	J. A. Hes E. Traul
Fine-cutting machine. Finishing tool. Fire escape. Fire escape. Firearm, Antomatic. Firearm magazineC	.E. Traul .M. S. Finkelstein W. Smitl .K. Krnke
Fine-cutting machine. Finishing tool. Fire escape. Fire escape. Firearm, Antomatic. Firearm magazineC	.E. Traul .M. S. Finkelstein W. Smitl .K. Krnke
Fine-cutting machine. Finishing tool. Fire escape. Fire escape. Firearm, Antomatic. Firearm magazineC	E. Trau E. Trau M. S. Finkelstei W. Smit E. K. Kruk H. A. F. L. Ros
Fine-cutting machine. Finishing tool. Fire escape. Fire escape. Firearm, Antomatic. Firearm magazineC	E. Trau E. Trau M. S. Finkelstei W. Smit E. K. Kruk H. A. F. L. Ros
Fine-cutting machine. Finishing tool. Fire escape. Fire escape. Firearm, Antomatic. Firearm magazineC	E. Trau E. Trau M. S. Finkelstei W. Smit E. K. Kruk H. A. F. L. Ros
Fine-cutting machine. Finishing tool. Fire escape. Fire escape. Firearm, Antomatic. Firearm magazineC	E. Trau E. Trau M. S. Finkelstei W. Smit E. K. Kruk H. A. F. L. Ros
Fine-cutting machine. Fine-cutting machine. Fine escape. Fire escape. Firearm, Antomatic. Firearm, Greasing deviction of. Fireproof constructions, for. Fireproof constructions. Fine plug. Fly paper holder. Flying machine. Flying machines and leavisation, Apparatus for aviation, Apparatus for	
Fine-cutting machine. Fine-cutting machine. Fine escape. Fire escape. Firearm, Antomatic. Firearm, Greasing deviction of. Fireproof constructions, for. Fireproof constructions. Fine plug. Fly paper holder. Flying machine. Flying machines and leavisation, Apparatus for aviation, Apparatus for	
Fine-cutting machine. Fine-cutting machine. Fine escape. Fire escape. Firearm, Antomatic. Firearm, Greasing deviction of. Fireproof constructions, for. Fireproof constructions. Fine plug. Fly paper holder. Flying machine. Flying machines and leavisation, Apparatus for aviation, Apparatus for	
Fine-cutting machine. Fine-cutting machine. Fine escape. Fire escape. Firearm, Antomatic. Firearm, Greasing deviction of. Fireproof constructions, for. Fireproof constructions. Fine plug. Fly paper holder. Flying machine. Flying machines and leavisation, Apparatus for aviation, Apparatus for	
Fine-cutting machine. Fine-cutting machine. Fine escape. Fire escape. Firearm, Antomatic. Firearm, Greasing deviction of. Fireproof constructions, for. Fireproof constructions. Fine plug. Fly paper holder. Flying machine. Flying machines and leavisation, Apparatus for aviation, Apparatus for	
Fine-cutting machine. Fine-cutting tool. Fire escape. Fire escape. Firearm, Antomatic. Firearms, Greasing deviction of. Fireproof constructions, for. Fireproof constructions. Fireproof constructions. Flag holder. Fine plug. Fly paper holder. Flying machine. Flying machine. Flying machines and leaviation, Apparatus for aviation, Apparatus for constructions. Form for garment fitting Fringe-making and embro	J. A. Hes E. Traul .M. S. Finkelstein .W. Smirl .K. Kruka .H. A. F. L. Ros e for the ammuni .R. Fromme .D. Fromme .D. F. Makowsk Filling block for .J. F. Makowsk Filling block for .G. W. Blaul .W. F. Peter .A. Olsson .R. C. Gor .urning the art o .testing .R. Alexander-Katz .J. Dicl .Richardson et a .Model .E. Van Dusen idering device .J. J. Merril
Fine-cutting machine. Fine-cutting tool. Fire escape. Fire escape. Firearm, Antomatic. Firearms, Greasing deviction of. Fireproof constructions, for. Fireproof constructions. Fireproof constructions. Flag holder. Fine plug. Fly paper holder. Flying machine. Flying machine. Flying machines and leaviation, Apparatus for aviation, Apparatus for constructions. Form for garment fitting Fringe-making and embro	J. A. Hes E. Traul .M. S. Finkelstein .W. Smirl .K. Kruka .H. A. F. L. Ros e for the ammuni .R. Fromme .D. Fromme .D. F. Makowsk Filling block for .J. F. Makowsk Filling block for .G. W. Blaul .W. F. Peter .A. Olsson .R. C. Gor .urning the art o .testing .R. Alexander-Katz .J. Dicl .Richardson et a .Model .E. Van Dusen idering device .J. J. Merril
Fine-cutting machine. Fine-cutting tool. Fire escape. Fire escape. Firearm, Antomatic. Firearms, Greasing deviction of. Fireproof constructions, for. Fireproof constructions. Fireproof constructions. Flag holder. Fine plug. Fly paper holder. Flying machine. Flying machine. Flying machines and leaviation, Apparatus for aviation, Apparatus for constructions. Form for garment fitting Fringe-making and embro	J. A. Hes E. Traul .M. S. Finkelstein .W. Smirl .K. Kruka .H. A. F. L. Ros e for the ammuni .R. Fromme .D. Fromme .D. F. Makowsk Filling block for .J. F. Makowsk Filling block for .G. W. Blaul .W. F. Peter .A. Olsson .R. C. Gor .urning the art o .testing .R. Alexander-Katz .J. Dicl .Richardson et a .Model .E. Van Dusen idering device .J. J. Merril
Fine-cutting machine. Fine-cutting the content of the content of the content of the cutting the cutting the cutting the cutting the cutting of the cutting the cutting of t	J. A. Hes E. Traul .M. S. Finkelstein .W. Smitl .K. Kruks .H. A. F. L. Ros e for the ammuni .R. Fromme clip and studding .J. F. Makowsk Filling block for .J. F. Makowsk Filling block for .J. F. Makowsk Filling block for .J. F. C. Gore .A. Olsson .R. C. Gore .A. Olsson .R. C. Gore .L. Alexander-Katz .L. Dicl .Richardson et a .ModelE. Van Duser idering device .J. J. Merril pe. C. J. Holul hton .W. E. Kurtz .C. C. Knutter .J. Leveen et a
Fine-cutting machine. Fine-cutting the content of the content of the content of the cutting the cutting the cutting the cutting the cutting of the cutting the cutting of t	J. A. Hes E. Traul .M. S. Finkelstein .W. Smitl .K. Kruks .H. A. F. L. Ros e for the ammuni .R. Fromme clip and studding .J. F. Makowsk Filling block for .J. F. Makowsk Filling block for .J. F. Makowsk Filling block for .J. F. C. Gore .A. Olsson .R. C. Gore .A. Olsson .R. C. Gore .L. Alexander-Katz .L. Dicl .Richardson et a .ModelE. Van Duser idering device .J. J. Merril pe. C. J. Holul hton .W. E. Kurtz .C. C. Knutter .J. Leveen et a
Fine-cutting machine. Fine-cutting machine. Fire escape. Fire escape. Fire escape. Firearm, Antomatic. Firearms, Greasing deviction of. Fireproof constructions, for. Fireproof constructions. Fireproof constructions. Fireproof constructions. Flag holder. Fine plug. Fly paper holder. Flying machine. Flying machines and leaviation, Apparatus for aviation, Apparatus for C. H. Form for garment fitting Fringe-making and embro Furnace grate. Furnace heat-conductor pit Furniture, Pneumatic-cus Furniture, Store. Furniture, Store. Furniture, Store. Furniture, Store. Furniture, Store. Furniture, Store. Game apparatus. Game apparatus. Game eounter. Games, Sling for ball.	J. A. Hes E. Traul M. S. Finkelstein W. Smirl K. Kruka H. A. F. L. Ros e for the ammuni R. Fromme Clip and studdins J. F. Makowsk Filling block for H. Ericson G. W. Blaul W. F. Peter A. Olsson R. C. Gor- urning the art o testing R. Alexander-Katz J. Dicl Richardson et a Model E. Van Dusen idering device H. Gurtlei J. J. Merril pe C. J. Holul hion W. E. Kurtz C. C. Knuttet J. Leveen et a G. J. Haul H. G. Barrett H. Wright et a E. R. Heussen A. D'Abreu et a
Fine-cutting machine. Fine-cutting machine. Fire escape. Fire escape. Fire escape. Firearm, Antomatic. Firearms, Greasing deviction of. Fireproof constructions, for. Fireproof constructions. Fireproof constructions. Fireproof constructions. Flag holder. Fine plug. Fly paper holder. Flying machine. Flying machines and leaviation, Apparatus for aviation, Apparatus for C. H. Form for garment fitting Fringe-making and embro Furnace grate. Furnace heat-conductor pit Furniture, Pneumatic-cus Furniture, Store. Furniture, Store. Furniture, Store. Furniture, Store. Furniture, Store. Furniture, Store. Game apparatus. Game apparatus. Game eounter. Games, Sling for ball.	J. A. Hes E. Traul M. S. Finkelstein W. Smirl K. Kruka H. A. F. L. Ros e for the ammuni R. Fromme Clip and studdins J. F. Makowsk Filling block for H. Ericson G. W. Blaul W. F. Peter A. Olsson R. C. Gor- urning the art o testing R. Alexander-Katz J. Dicl Richardson et a Model E. Van Dusen idering device H. Gurtlei J. J. Merril pe C. J. Holul hion W. E. Kurtz C. C. Knuttet J. Leveen et a G. J. Haul H. G. Barrett H. Wright et a E. R. Heussen A. D'Abreu et a
Fine-cutting machine. Fine-cutting machine. Fire escape. Fire escape. Fire escape. Firearm, Antomatic. Firearms, Greasing deviction of. Fireproof constructions, for. Fireproof constructions. Fireproof constructions. Fireproof constructions. Flag holder. Fine plug. Fly paper holder. Flying machine. Flying machines and leaviation, Apparatus for aviation, Apparatus for C. H. Form for garment fitting Fringe-making and embro Furnace grate. Furnace heat-conductor pit Furniture, Pneumatic-cus Furniture, Store. Furniture, Store. Furniture, Store. Furniture, Store. Furniture, Store. Furniture, Store. Game apparatus. Game apparatus. Game eounter. Games, Sling for ball.	J. A. Hes E. Traul M. S. Finkelstein W. Smirl K. Kruka H. A. F. L. Ros e for the ammuni R. Fromme Clip and studdins J. F. Makowsk Filling block for H. Ericson G. W. Blaul W. F. Peter A. Olsson R. C. Gor- urning the art o testing R. Alexander-Katz J. Dicl Richardson et a Model E. Van Dusen idering device H. Gurtlei J. J. Merril pe C. J. Holul hion W. E. Kurtz C. C. Knuttet J. Leveen et a G. J. Haul H. G. Barrett H. Wright et a E. R. Heussen A. D'Abreu et a
Fine-cutting machine. Finishing tool. Fire escape. Fire escape. Firearm, Antomatic. Firearm magazine C. Firearms, Greasing deviction of. Fireproof constructions, for. Fireproof constructions. I Flag holder. Flue plug. Fly paper holder Flying machine. Flying machine. Flying machine. Flying machine aviation, Apparatus for aviation, Apparatus for C. H. Form for garment fitting Fringe-making and embro Furnace grate. Furnace heat-conductor pi Furniture, Pneumatic-cus Furniture, Store. Furniture, Store. Fuse, SafetyS. Gambrel. Game apparatus. Game apparatus. Game loard W. Game eounter. Games, Sling for ball. Garment. Garment holder or rack. Garment support. Gas burnerE.	J. A. Hes E. Traul M. S. Finkelstein W. Smitl K. Kruks H. A. F. L. Ros e for the ammuni R. Fromme clip and studdins J. F. Makowsk Filling block for H. Eriesson G. W. Bland W. F. Peter A. Olsson R. C. Gore G. W. Bland W. F. Peter A. Olsson R. C. Gore L. Gore L. Gore L. Gurtlei E. Van Dusei idering device H. Gurtlei J. J. Merril pe. C. J. Holul hion W. E. Kurtz C. C. Knuttei J. Leveen et a G. J. Haul H. G. Barrett H. Wright et al E. R. Heussei A. D'Abreu et al W. H. Stevenson L. S. Lee A. Johnson J. Randle P. Killgore et al
Fine-cutting machine. Finishing tool. Fire escape. Fire escape. Firearm, Antomatic. Firearm magazine C. Firearms, Greasing deviction of. Fireproof constructions, for. Fireproof constructions. I Flag holder. Flue plug. Fly paper holder Flying machine. Flying machine. Flying machine. Flying machine aviation, Apparatus for aviation, Apparatus for C. H. Form for garment fitting Fringe-making and embro Furnace grate. Furnace heat-conductor pi Furniture, Pneumatic-cus Furniture, Store. Furniture, Store. Fuse, SafetyS. Gambrel. Game apparatus. Game apparatus. Game loard W. Game eounter. Games, Sling for ball. Garment. Garment holder or rack. Garment support. Gas burnerE.	J. A. Hes E. Traul M. S. Finkelstein W. Smitl K. Kruks H. A. F. L. Ros e for the ammuni R. Fromme clip and studdins J. F. Makowsk Filling block for H. Eriesson G. W. Bland W. F. Peter A. Olsson R. C. Gore G. W. Bland W. F. Peter A. Olsson R. C. Gore L. Gore L. Gore L. Gurtlei E. Van Dusei idering device H. Gurtlei J. J. Merril pe. C. J. Holul hion W. E. Kurtz C. C. Knuttei J. Leveen et a G. J. Haul H. G. Barrett H. Wright et al E. R. Heussei A. D'Abreu et al W. H. Stevenson L. S. Lee A. Johnson J. Randle P. Killgore et al
Fine-cutting machine. Finishing tool. Fire escape. Fire escape. Firearm, Antomatic. Firearm magazine C. Firearms, Greasing deviction of. Fireproof constructions, for. Fireproof constructions. I Flag holder. Flue plug. Fly paper holder Flying machine. Flying machine. Flying machine. Flying machine aviation, Apparatus for aviation, Apparatus for C. H. Form for garment fitting Fringe-making and embro Furnace grate. Furnace heat-conductor pi Furniture, Pneumatic-cus Furniture, Store. Furniture, Store. Fuse, SafetyS. Gambrel. Game apparatus. Game apparatus. Game loard W. Game eounter. Games, Sling for ball. Garment. Garment holder or rack. Garment support. Gas burnerE.	J. A. Hes E. Traul M. S. Finkelstein W. Smitl K. Kruks H. A. F. L. Ros e for the ammuni R. Fromme clip and studdins J. F. Makowsk Filling block for H. Eriesson G. W. Bland W. F. Peter A. Olsson R. C. Gore G. W. Bland W. F. Peter A. Olsson R. C. Gore L. Gore L. Gore L. Gurtlei E. Van Dusei idering device H. Gurtlei J. J. Merril pe. C. J. Holul hion W. E. Kurtz C. C. Knuttei J. Leveen et a G. J. Haul H. G. Barrett H. Wright et al E. R. Heussei A. D'Abreu et al W. H. Stevenson L. S. Lee A. Johnson J. Randle P. Killgore et al
Fine-cutting machine. Finishing tool. Fire escape. Fire escape. Firearm, Antomatic. Firearm magazine C. Firearms, Greasing deviction of. Fireproof constructions, for. Fireproof constructions. I Flag holder. Flue plug. Fly paper holder Flying machine. Flying machine. Flying machine. Flying machine aviation, Apparatus for aviation, Apparatus for C. H. Form for garment fitting Fringe-making and embro Furnace grate. Furnace heat-conductor pi Furniture, Pneumatic-cus Furniture, Store. Furniture, Store. Fuse, SafetyS. Gambrel. Game apparatus. Game apparatus. Game loard W. Game eounter. Games, Sling for ball. Garment. Garment holder or rack. Garment support. Gas burnerE.	J. A. Hes E. Traul M. S. Finkelstein W. Smitl K. Kruks H. A. F. L. Ros e for the ammuni R. Fromme clip and studdins J. F. Makowsk Filling block for H. Eriesson G. W. Bland W. F. Peter A. Olsson R. C. Gore G. W. Bland W. F. Peter A. Olsson R. C. Gore L. Gore L. Gore L. Gurtlei E. Van Dusei idering device H. Gurtlei J. J. Merril pe. C. J. Holul hion W. E. Kurtz C. C. Knuttei J. Leveen et a G. J. Haul H. G. Barrett H. Wright et al E. R. Heussei A. D'Abreu et al W. H. Stevenson L. S. Lee A. Johnson J. Randle P. Killgore et al
Fine-cutting machine. Finishing tool. Fire escape. Fire escape. Fire escape. Firearm, Antomatic. Firearm, Greasing deviction of. Fireproof constructions, for. Fireproof constructions. Fireproof constructions. Fireproof constructions. Flag holder. Fine plug. Fly paper holder. Flying machine. Flying machine. Flying machines and leraviation, Apparatus for aviation, Apparatus for Foldiug bracket (2 pats.), C. H. Form for garment fitting Fringe-making and embro Furnace grate. Frunace heat-conductor pirenace heat-conductor pirenace heat-conductor pirenace state. Furnace heat-conductor pirenace state. Furnace heat-conductor pirenace state. Furnace hourd. Game apparatus. Game apparatus. Game apparatus. Game counter. Gauses, Sling for ball. Garment. Garment holder or rack. Garment support. Gas controller. Antomatic Gas drip, Automatic. Gas feed for vacuum tube. Gas filter. Gas generator, Acetylene. Gas lighter and extingue.	J. A. Hes E. Traul M. S. Finkelstein W. Smirl K. Kruka H. A. F. L. Ros e for the ammuni R. Fromme R. Fromme R. Fromme Il. Ericsson G. W. Blaul W. F. Peter A. Olsson R. C. Gor C. Gor C. Gor C. Gor C. L. Cor L. Leven et a G. J. Haul H. G. Barreti J. J. Merril L. C. C. Knuttei L. S. Loc A. Johnson J. R. Heussei A. D'Abreu et a W. H. Stevenson J. C. Landos J. C. Landos J. C. Landos O. Justins C. Erickson et al es, Automatic D. M. Moore G. S. Linn W. H. Parker G. Robeson W. H. Parker Leven et a G. S. Linn W. H. Parker
Finishing tool. Fire escape. Fire escape. Fire escape. Fire escape. Fire escape. Firearm, Antomatic. Firearm, Antomatic. Firearm, Greasing deviction of. Fireproof constructions, for. Figure holder. Flying paper holder. Flying machine. Flying machine. Flying machine. Flying machine and ler aviation, Apparatus for cutter. Folding bracket (2 pats.)	J. A. Hes E. Traul M. S. Finkelstein W. Smirl K. Kruka H. A. F. L. Ros e for the ammuni R. Fromme R. Fromme R. Fromme Il. Ericsson G. W. Blaul W. F. Peter A. Olsson R. C. Gor Corruing the art of testing L. Lexander-Katz J. Dicl Richardson et a Model E. Van Duser H. Gurtle J. J. Merril L. S. Kurte J. J. J. Sarret J. Leveen et a G. J. Haul H. G. Barret H. Wright et a E. R. Heusser A. Johnson J. R. Randle L. S. Lec A. Johnson J. R. Randle J. C. Landes J. M. Moore G. S. Linn W. H. Parker Sheer M. Moore G. Robson toff for
Finishing tool. Fire escape. Fire escape. Fire escape. Fire escape. Fire escape. Firearm, Antomatic. Firearm, Antomatic. Firearm, Greasing deviction of. Fireproof constructions, for. Figure holder. Flying paper holder. Flying machine. Flying machine. Flying machine. Flying machine and ler aviation, Apparatus for cutter. Folding bracket (2 pats.)	J. A. Hes E. Trau M. S. Finkelstei W. Smirk H. A. F. L. Ros e for the ammuni R. Fromme R. Fromme R. Fromme Plant for the ammuni J. F. Makowsk H. Ericsson G. W. Blant W. F. Peter A. Olsson R. C. Gor Uning the art o testing Alexander-Kat J. Dicl Richardson et a Model E. Van Dusel idering device H. Gurtle J. J. Merril J. J. Merril J. J. Merril Leveen et a G. J. Haul H. G. Barret H. Wright et a E. R. Heussel D. Abrou et a W. H. Stevenson J. R. Randle J. C. Landes J. C. Landes J. C. Landes O. Justus C. Erickson et al es, Automatic D. M. Moore G. S. Linn W. H. Parker Erickson G. Robson toff for
Finishing tool. Fire escape. Fire escape. Fire escape. Fire escape. Fire escape. Firearm, Antomatic. Firearm, Antomatic. Firearm, Greasing deviction of. Fireproof constructions, for. Figure holder. Flying paper holder. Flying machine. Flying machine. Flying machine. Flying machine and ler aviation, Apparatus for cutter. Folding bracket (2 pats.)	J. A. Hes E. Traul M. S. Finkelstein W. Smirl K. Kruka H. A. F. L. Ros e for the ammuni R. Fromme R. Fromme R. Fromme Il. Ericsson G. W. Blaul W. F. Peter A. Olsson R. C. Gor Corruing the art of testing L. Lexander-Katz J. Dicl Richardson et a Model E. Van Duser H. Gurtle J. J. Merril L. S. Kurte J. J. J. Sarret J. Leveen et a G. J. Haul H. G. Barret H. Wright et a E. R. Heusser A. Johnson J. R. Randle L. S. Lec A. Johnson J. R. Randle J. C. Landes J. M. Moore G. S. Linn W. H. Parker Sheer M. Moore G. Robson toff for
Fine-cutting machine. Finishing tool. Fire escape. Fire escape. Fire escape. Firearm, Antomatic. Firearm, Greasing deviction of. Fireproof constructions, for. Fireproof constructions. Fireproof constructions. Fireproof constructions. Flag holder. Fine plug. Fly paper holder. Flying machine. Flying machine. Flying machines and leraviation, Apparatus for aviation, Apparatus for Foldiug bracket (2 pats.), C. H. Form for garment fitting Fringe-making and embro Furnace grate. Frunace heat-conductor pirenace heat-conductor pirenace heat-conductor pirenace state. Furnace heat-conductor pirenace state. Furnace heat-conductor pirenace state. Furnace hourd. Game apparatus. Game apparatus. Game apparatus. Game counter. Gauses, Sling for ball. Garment. Garment holder or rack. Garment support. Gas controller. Antomatic Gas drip, Automatic. Gas feed for vacuum tube. Gas filter. Gas generator, Acetylene. Gas lighter and extingue.	J. A. Hes E. Trau M. S. Finkelstei W. Smirk H. A. F. L. Ros e for the ammuni R. Fromme R. Fromme R. Fromme Plant for the ammuni J. F. Makowsk H. Ericsson G. W. Blant W. F. Peter A. Olsson R. C. Gor Uning the art o testing Alexander-Kat J. Dicl Richardson et a Model E. Van Dusel idering device H. Gurtle J. J. Merril J. J. Merril J. J. Merril Leveen et a G. J. Haul H. G. Barret H. Wright et a E. R. Heussel D. Abrou et a W. H. Stevenson J. R. Randle J. C. Landes J. C. Landes J. C. Landes O. Justus C. Erickson et al es, Automatic D. M. Moore G. S. Linn W. H. Parker Erickson G. Robson toff for

An Irresistible Bargain

\$1.75 Value for Only \$1.15

ALL FOR ONLY \$1.15

One Year's Subscription for McCall's Magazine, Any 15-Cent McCall Pattern you may select, One Year's Subscription for the Inventive Age

McCall's Magazine

Is a large, artistic, handsomely illustrated hundred-page monthly magazine. It contains sixty new Fashion Designs in each issue. Every woman needs it for its up-to-date fashions, entertaining stories and complete information on all home and personal topics. Over one million subscribers. Acknowledged the best Home and Fashion Magazine. Regular price, 5 cents a copy. Worth double.



McCall Patterns

So simple you cannot misunderstand them. Absolutely accurate. In style, irreproachable. You may select, free, any McCall Pattern you desire from the first number of the magazine which reaches you. Regular price, 15 cents.

The Inventive Age.

A journal of manufacturing industry and scientific progress. The indispensable paper for patentees. Contains matter and information not found elsewhere. Regular price, \$1.00 per year.

DON'T MISS THIS EXTRAORDINARY OFFER. Address: THE INVENTIVE AGE Publishing Co., Washington, D. C.

The DIAMOND

SELF-FILLING AND SELF-CLEANING Fountain Pen.

IT IS AWAY AHEAD
OF ANY OTHER PEN
MANUFACTURED BECAUSE OF ITS SELFFILLING AND SELFCLEANING FEATURES.





Including one year's subscription to "The Inventive Age."

Price \$2.00.

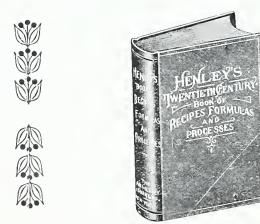
No Lost Time.

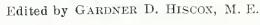
Address

INVENTIVE AGE PUB'L. COMPANY, WASHINGTON, D. C.

HENLEY'S TWENTIETH CENTURY BOOK OF

Recipes, Formulas & Processes





Price, \$3.00 Cloth Binding

\$4.00 Half Morocco Binding

800 large Octavo (6 x 9½) Pages.

Contains over 10,000 Selected Scientific, Chemical, Fechnological, and Practical Recipes and Processes,

Including Hundreds of so-called Trade Secrets for every business.

This is THE BOOK everyone should have at his command who seeks PRACTICAL, ACCURATE KNOWLEDGE and GUIDANCE in his every-day work, as no book has ever been published which so fully meets the multifarious requirements of the factory, the workshop, the laboratory, and the household. In preparing the work for so exacting and numerous a class of readers the Elitor has exerted every effort to present only information which is practical, accurate and modern.

Address---

INVENTIVE AGE PUB'L. COMPANY WASHINGTON, D. C.

SEND FOR OUR FREE CATALOGUE OF BOOKS FOR INVENTORS AND MECHANICS.

Address: THE INVENTIVE AGE PUBL'G CO., 918 F St., Washington, D. C.



Vol. XXIII. No. 3. }

Washington, D. C.—March 1, 1911.

SINGLE COPIES 10 CENTS, ONE DOLLAR A YEAR,

LONG DISTANCE PHOTOGRAPHY WITH TELEPHOT.

By Frank C. Perkins.

objects at a distance.

atus. The fineness of the details and ground glass D.

the harmony of the whole in the landscape demonstrate the advantages of the telephot and its superiority over an ordinary lens camera in giving an image without distorted perspec-

The telephot permits the taking of pictures in the one one-hundredths of a second, while an extra rapid construction allows exposures of one fivehundredths of a second, the taking of telephotographs instantaneously being thus rendered possible.

The telephot is not a lens or an attachment that can be applied to any camera, but is an instrument complete in itself. The focusing and taking of the negative are performed in exactly the same way as with any other

THE accompanying illustrations show camera, the side of the image being views taken with telephot appar- obtained by the focal length of the atus from a carriage, and indicate lens. To make use of lenses of great the remarkable clearness and enlarge- focal length and to reduce the weight ment resulting from the use of this and volume of the apparatus, a French one grave fault:—want of luminos- enlargement. The negatives obtained apparatus for the photography of inventor conceived the idea of break- ity and consequent difficulty in focus- are as sharp as those made with the The small view in Fig. 1 is a means of two mirrors placed in the luminosity of the ordinary telegeneral view of the Castle of interior of the camera, as shown in Clatelard taken from the pier of Fig. 2, where, as will be noted, the Montreux, with an ordinary lens, while rays of light passing through the lens the larger one is a view taken from A are reflected from the mirror B to the same point with a telephot appart the mirror C and from there to the taking of instantaneous views. The and the mountain climber can be

demand for a satisfactory system of ing the focal length into thirds, by ing. It is maintained that the want of ordinary apparatus of short focus. objective is not to be contested, since varied that it becomes indispensable it gives an enlargement of the ordi- in nearly every domain of photonary view and not a view large in itself, which renders impossible the individuals without their knowledge,

For a long time there has been a this inconvenience, since the image is not enlarged but is large by reason of photographing objects at a distance. the focal length of the lens. There is The different teleobjectives have had thus no loss of light because of the

The utility of the telephot is so graphy. A reporter may photograph new apparatus is said to be free from followed in all his perilous passages

> er comfortably installed on the hotel balcony. An officer of the army can observe the enemy from a balloon and register important movements, and an agent of the navy can make observations of the coast at a long distance and take views from the deck of his ship in motion. The scientist can fix on a sensitive plate the physical phenomena visible on the extremehorizon, such as volcanic eruptions. Architects and archeologists can examine and photograph buildings too distant or too high to be taken with an ordinary apparatus. The arctic explorer, also, can observe inaccessible objects. The telephotisprovided with a terrestrial eye piece that trans-

> by the photograph-

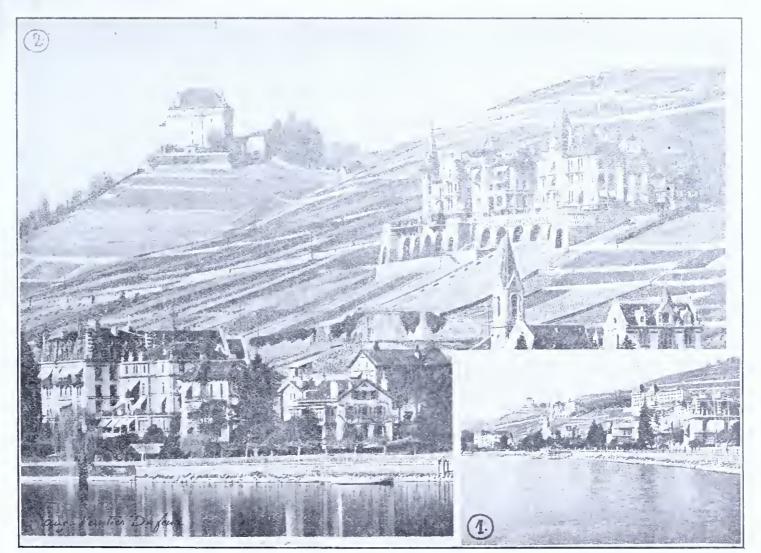


FIG. 1.—PHOTO WITH ORDINARY LENS AND WITH TELEPHOT.

forms it into an excellent telescope. It suffices simply to replace the ground glass by a board into which is fitted the eye-piece. In a similar manner it can be made to serve as a microscope.

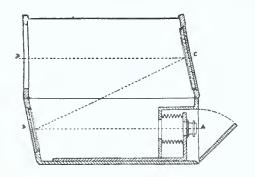


FIG. 2.

It is maintained that in the studio the telephot apparatus will find wide employment when the immense advantages of making the portrait with a lens of long focus, to avoid distortion and disagreeable foreshortening, are realized.

By utilizing the telephot apparatus with its mirrors and a lens of short focus, direct enlargements can be made and microphotographs can be obtained by placing the object to be photographed at a distance of six or eight inches from the lens.

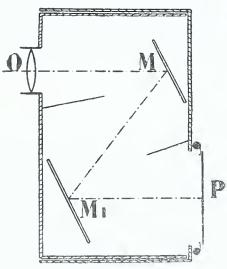


Fig. 3.

In Fig. 3 is shown another construction of this apparatus, O being objective, M M the mirrors and P the sensitive plate. By shifting the sliding rear section, the arrangement of the mirrors and plate give a telephot apparatus of 12 inch, 24 inch or 36 inch focus, as desired.

How to Get Copies of Patents.

THE INVENTIVE AGE prints each month a list of the patents granted by the Patent Office. This list includes the name of the inventor, the title of the invention and the date of the patent. Anyone can procure through THE INVENTIVE AGE a copy of any patent included in the list, by giving the data and enclosing ten cents in stamps for each copy. There is no better way of keeping yourself informed about the progress of the arts than by scanning the list each month and ordering copies of patents.

INCANDESCENT LAMP HEATING AND COOKING DEVICES.

Some interesting and unique electric heating and cooking devices, using incandescent lamps for supplying the necessary heat, have been developed as shown in the accompanying drawings. By means of the ordinary carbon filament lamp of 4 watts per candle, therefore of low lighting efficiency (about 5 degrees) and high heating efficiency (about 95 degrees) a most simple, cheap and efficient electric heating and cooking apparatus is obtainable, whereby food may be cooked and material heated to temperatures of 300 degrees Fahr., with the least possible loss in heat.

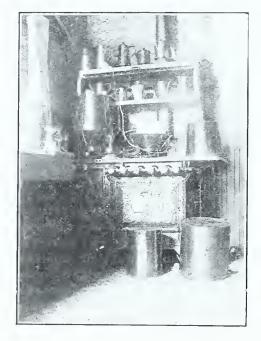


FIG. 1.—ELECTRIC HEATER.

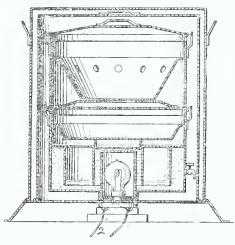
It is well known that water is a good insulator of heat when circulation is interfered with, and is also a great absorber of heat. For instance, a test tube several inches long filled with water may be held at the lower end in the hand without discomfort, while the water in the upper portion may be boiling at 212 degrees Fahr., from the heat of a Bunsen burner flame.

In the ordinary steam cookers and other similar devices, where a considerable quantity of water is heated in order not to boil dry, a large amount of heat is wasted when the cooking has been accomplished by throwing away this water which has absorbed the heat. Again, all of the water must be heated to the temperature of 212 degrees or thereabouts before any of it will boil, when the heat is applied from the bottom in the ordinary manner. For cooking itself, the actual amount of heat required is really very small as compared with the heat lost by radiation and absorbed by the water, which is discarded after the cooking has been accom-

In these electric steam and vapor cookers with incandescent lamps, it is only necessary to heat a small film or thin layer of water to the boiling point, the vapor or steam arising from this small amount of water doing the cooking in the steamer while the remaining water is at a much lower temperature and is utilized only as a source of supply or storage, while it is at the same time absorbing heat which is ordinarily wasted by radi-

The principle utilized in the ordinary fireless cooker is that the vast amount of heat absorbed by a body of water when brought to the boiling point is given up to the food to be cooked when the whole is enclosed in a chamber well insulated by straw, asbestos or other material, which prevents the heat from escaping to the outside of the cooker. It is well known that dead air space is one of the best heat insulators, and this is taken advantage of in this electric fireless cooker, by providing air chambers and outer shells with air spaces for retaining the heat, the water boiling in the center, while the outer shell is comparatively cold. While with the ordinary fireless cooker the heat is all first absorbed by the water heated by a flame and then given off to the food during the night, the electric cooker applies only a small amount of heat electrically and continuously for a considerable length of time, the food being hot and ready for service immediately in the morning. With the ordinary fireless cooker not only must outside heat with a flame be applied to boil the water in the first place, but the food while thoroughly cooked must still be reheated a trifle in the morning before serving, which is a great annoyance.

The accompanying illustrations show an electric vapor or steam cooker consisting of a heatingulating marble or slate base on which is mounted a porcelain electric heating lamp support with electric connections, the novelty of which consists of a metal or porcelain cylindrical support with a white surface for reflecting the rays from the heating lamp to the black lined heat-absorbing shell which it supports, either on the inside or by a circular projection on the outside of the support.



The heat from the electric lamp is absorbed by the inner black surface of the metal shell, and is communicated by conduction to the water surrounding this shell, which is in a cylindrical or cone-shaped chamber containing only a thin layer of water, which may therefore be quickly heated to a steaming temperature.

It will be seen in the drawing that an additional air or steam chamber is provided surrounding this laver of

water, activg as a heat insulator to prevent the rapid transfer of heat from the steaming water to the storage water in the outer surrounding chamber.

A small hole communicates at the bottom with the steaming water, allowing the passage of the liquid from the storage chamber, forced by the heated air in the upper part of the same, also by the heated air or vapor passing through the hole near the top of this chamber and communicating with the air insulating chamber surrounding the steaming water cylinder.

For heat insulation, outer shells are provided to retain the heat within the cooking apparatus, and as the water is vaporized in the steaming water cylinder it is continuously replaced on account of the increased pressure in the water storage chamber.

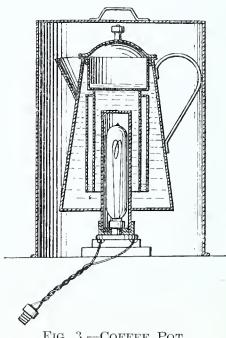


Fig. 3.—Coffee Pot.

Another arrangement of the electric cooker retains the principal features of a thin heating film of water, an insulating air, steam or vapor shell chamber and an outer storage chamber, the latter three being formed by a removable double cylinder, pressed down into the water and forcing the same into the space between the cylinders and into the steaming water layer. An electric coffee pot has been designed along the same lines, the lamp heating the thin film of water which rises through the coffee in the perforated receptacle at the top and circulates, passing down along the outside wall of the coffee pot, as shown in Fig. 3.

Only a small amount of water is required for poaching eggs, and a novel combination egg poacher and plate warmer has been developed. Dry heat may be supplied for warming plates, while a thin layer of water is utilized for a few minutes for poaching the eggs.

These cooking and heating devices are provided with resistance heat regulating sockets mounted between the supporting receptacle and the heating lamp, when found desirable. Another construction utilizes a thermostat plug between the porcelain receptacle and the tubular heating lamp, for controlling the temperature as desired.

In another form of electric lamp steam cooker the inner heat insulating shell, covering the inner steamer at

the top, dips into the water, the compressed air, steam or vapor forcing the water outside and surrounding the shell, and this water remaining comparatively cool and corresponding to the water in the lower part of the test tube in the experiment above referred to, while the water in the center of the steaming cylinder or cone corresponds to that water in the top of the test tube at the boiling point.

An electric shaving cup illustrates one of the simplest applications of the use of incandescent lamps in heating the water surrounding the black lined heat absorbing shell (with the soap on top).

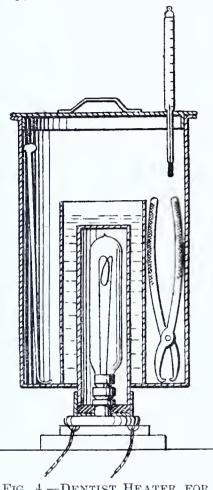


Fig. 4.—Dentist Heater for Sterilizing Instruments.

Fig. 4 shows a device using a thin film of water vaporized by the incandescent lamp for producing the necessary temperatures for sterilizing instruments of dentists and surgeons.



Fig. 5.—Electric Sealing Wax • Heater.

An electric cereal cooker or glue heater is another application of the neandescent lamp using an inner re-

ceptacle to be heated by steam or water in the outer shell, the heat being communicated from the steaming water which in turn is heated by the transmitting shell in the center.

The incandescent lamp curling iron heater is the simplest application of the heat devices, the iron being in contact with the black heat-absorbing surface of the shell, which is in turn supported by a white lined or reflecting support of porcelain fastened to the heating lamp receptacle as a base, and connected with any electric lighting current by attachment plug.

An electric sealing wax heater is a similar device, the wax receiving the heat by conduction from the shell itself, and when protected by the outer shell a four or eight candle power lamp will keep the sealing wax continuously hot for use in a bank, shipping or express office.

The accompanying illustrations show the construction and method of operation of these unique electric steam cookers.

Mine Telephone.

Half the terrors of mine accidents will be done away with by the use of a wireless telephone apparatus, especially adapted for employment underground. Communication can be established in an instant by the earth waves. A man buried hundreds of feet below the surface of the ground can carry on a conversation with a rescue party above and can inform them of his exact position, the extent of the damage, the location of a fire, and the best means of reaching him. A camera-like apparatus, on a little tripod stand, connected by two wires to iron pieces which are plunged into the earth, is placed above ground and a similar instrument is set up within the mine. Trials show that words pass between the two devices more clearly than through an ordinary phone. The principle of the device is the utilization of the earth for transmitting electric waves, which, as sound waves, are sent through the air. The telephone is made to actuate an impulse coil which sends electric impulses through the earth, these reaching the iron ends of the receiving instrument. Here they are converted again into sound. The system is said to be even more effective in water.

Magnets in Mills.

Particles of iron, or pieces of nails that happen to be found in grain often cause explosions in flour mills and breweries. The pieces of iron strike the steel rolls of the mills and produce sparks, which ignite the finely pulverized material around them. The aid of electricity has been enlisted to combat this difficulty, and an electro-magnetic method of removing the iron particles has been devised. Grain is now passed over magnets before being prepared for shipment. In one large malting concern, where such explosions were frequent and troublesome, the cleaning capacity of the magnets installed is 1,000 bushels per hour. When the magnets have collected a large amount of metal, they are swung to one side and swept clean.

An Electrical Kitchen.

West Point, the greatest military academy in the world, has one of the finest electric kitchens modern engineering methods could devise. Without the aid of electricity it would be quite a task to prepare the food for the 400 or 500 students at this United States military school, and the results would not be so sanitary and palatable.

The quality of food is a very im-

portant item in any such establish-

ment. and the Government demands that the kitchen at West Point be kept scrupulously clean. The chef and his assistants work under military rules, and the appointed time for meals does not vary five minutes the entire year. The kitchen is thoroughly electrified. The food is cleaned and prepared by this method. Electric heat cooks and bakes the meats, vegetables and pastry. Electric power cleans the dishes, sharpens the knives and polishes the silver. All the bread is mixed by electricity. The whole baking from start to finish is completed without the hands of the baker touching it at all, except to push the pans into the oven. The great wooden bowl, says Electrical News, in which the dough is mixed has several funnels leading to it—one from the flour department, one from the yeast and another from the water supply. By touching a lever the funnel is made to open, and as much of each of the ingredients as is required goes into the mixer. The loaves are then cut by the same power, and fall from the cutting machine into the baking panin regular order. The cutter may be set for any size, and is frequently used for rolls, a thousand of which are baked each day, in addition to 100 loaves of bread. Once a week 50 cakes are made, all the eggs being beaten by electricity. The housewife who labors an hour to bring eggs to the proper lightness for sponge cake would appreciate the convenience of merely having to touch a button to start the egg beater, and then go off and attend to something else until the eggs are ready. It is no uncommon thing for 100 eggs to be beaten in this manner, for egg custard is a favorite dessert. The electric potato peeler, however, is the labor saving device par excellence. It is the invention of an officer, who was regarded as the best financier in the army, and was at one time in charge of the cadets' mess. About five barrels of potatoes are used daily, and the whole amount can be peeled in half an hour. A bushel of potatoes is put into the machine at a time, the lever is turned, and inside of five minutes the whole bushel of potatoes, perfectly pared without the least waste, falls into a tub. The Chinese Prince who recently visited the institution was so delighted with this useful apparatus that several bushels of potatoes were peeled for his diversion, and indeed, he is said to have shown more interest in the working of this device than in any other part of the academy. There is also an electric apparatus for cutting potatoes into various shapes.

Nearly 200 gallons of milk are sterilized every morning by the electric sterilizer, for the surgeons at West Point are determined that the milk used by the cadets shall be free from bacteria. This apparatus is a complicated affair to the layman. The milk is poured into cans and heated to 180 degrees. This, of course, kills the bacteria, and in less than a minute, by a chemical process, the temperature of the milk is reduced to 38 degrees and it is ready for the table. Ice cream, the usual Sunday dessert, is always made by electricity, and requires only a few minutes to prepare. The ice is manufactured at the academy, and that used on the table is chopped by electricity and cut into small cubes.

The dishes, too, are washed by electricity—another wonderful labor saving device, and the envy of every woman who sees its workings. The absence of dirty dishes about the kitchen is refreshing, for it is an ironclad rule that each pan or dish must be washed immediately after it has been used. The dishes are placed in a large wire basket, which sinks into scalding water and revolves a few minutes. A lever then lifts the dishes to trays, where they are dried by a current of hot air. The dishes used at dinner by 500 cadets can be washed and put away by two persons, in this manner, in half an hour.

Uncle Sam is an economical house-keeper, and insists that there shall be no waste. Even the greasy water from the kitchen is turned to profit, for this, together with soap skimmings, is poured into a tank under the pavement back of the building. When it cools the grease rises to the surface, and is skimmed and sold, with the offal of meat, to a soap manufacturer. Apart from keeping the sewers free from grease, its sale amounts to about \$100 a year.

Automatic doors lead from the kitchen into the mess hall, one being used by waiters to enter and the other to leave the hall. There is a platform in front of each, and when the waiter appears, tray in hand, he steps on the platform, and this causes the door to open and remain until he has passed through. This saves the loss of dishes by accidental dropping when the waiter has to push open the door, and lessens the noise as well. This, too, was an object of wonder to Prince Tsai Tao, who examined it minutely.

All the silver is polished by electricity, and it is remarkable how easily the most elaborately chased pieces are cleaned, and how the brush reaches the tiny corners and cleans in few minutes a piece of silver that would require hours of hand work. The entire culinary department, in fact, is a model of cleanliness and convenience.

To keep themselves posted in the progress of the arts in which they are interested, inventors and manufacturers should subscribe for the INVENTIVE AGE, which publishes a list of all patents issued each month. The low subscription price and the character of the publication entitle it to the support of all the inventors of the country.

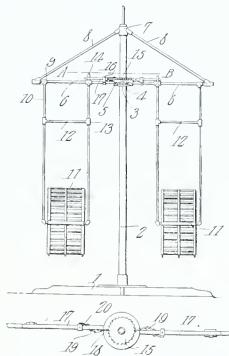
CLEVER NEW PATENTS.

Swing.—Attachment for Shaving Cups.

Minnow Bait.—Drinking Cup.

Swing.

Since the days when a swing meant a rope suspended from a tree, with a board for a seat, usually rigged up at picnics and on farms, many changes and improvements have been made. Swings are no longer monopolized by children, but form an attraction and a recreation both at home and at pleasure resorts for almost every age, many persons finding the oscillatory motion soothing and restful. Mr. Arthur W. Lyda, of Canton, Ohio, has contributed to the art a novel swing including seats adapted when moved in the usual manner, to operate mechanism which causes the seats to travel in a circle. His device is simple in construction, not easily gotten out of order, and inexpensive of manufacture.



The illustration given discloses the means employed to attain this end. From the base of the swing extends a tubular standard 2, on which is arranged a collar 3. The collar supports a series of anti-friction balls 4, bearing a cap 5, said cap being provided with a recess into which the collar 3 projects. This cap freely rotates upon the standard 2, and it has oppositely extending arms 6, which are formed of metal pipes. Mounted on the upper end portion of the standard 2 is a sleeve 7, which is connected by means of braces 8 with the outer ends of the arms 6, ordinary pipe joints being used for the purpose of connecting the parts. T-joints 9 are loosely mounted on each arm 6, and have hangers 10 extending downwardly therefrom and oscillating freely, and constituting supports for a seat 11, the said hanger being connected at one or more points by transverse braces 12, these braces being attached to the hangers by T-joints 13. A finger 14 extends up-

wardly from each of the joints 9.
To the standard 2, a ratchet 15 is firmly fastened, and secured upon each arm 6 and adjacent to the brackets 16, within which they are mounted, are levers 17. The inner end of each lever has a dog 18, pivotally connected to it, said dogs being held normally in engagement with the ratchet by means of springs 19. The outer end of each lever is in engagement with the fingers 14. Inasmuch as the ratchet is fixed, the oscillation of the hangers 10 results in the arms 6 moving about the standard. This actuation of the arms occurs during the swinging of each chair in one direction. When the chair swings in the opposite direction, the finger movable therewith moves away from the lever, and the said lever is then returned to its initial position relative to the arm, by means of a spring 20, the dog at this time slipping over one or more teeth of the ratchet wheel.

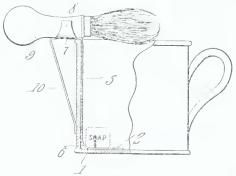
It will thus be observed that when the chairs and hangers are swung in the usual manner, the arms supporting them will be caused to travel in a circle, and a constantly changing view will be presented to the occupants of the swing.

Attachment for Shaving Cups.

The ordinary means employed by men in obtaining the lather necessary for their daily shaves are both inconvenient and unsanitary. At best, a two-compartment cup is employed, in one side of which the soap is placed where it usually becomes both soft and unclean, while in the other side the brush is placed, to retain its dampness after shaving and to curl its bristles under its weight when finally dried, making it inconvenient to lather.

No such objection may be urged against the ingenious device herein illustrated—the invention of Ewald Praeger, of San Antonio, Texas. This contrivance may be fitted on any cup, and, when used, the brush is conveniently at hand, the soap supported in such a manner as to enable the requisite amount of lather to be obtained without useless waste of the soap; while between shaves the brush is left free to dry without detriment to its bristles, and the appliance is kept in a thoroughly sanitary condition.

The convenient and novel arrangement devised will readily appear from the illustration. A soap plate which normally rests upon the bottom of the cup 1, is indicated by the reference numeral 2. This plate is preferably, although not essentially, formed of sheet metal, and is shaped with rounded corners, which cause it to fit snugly against the adjoining portion of the walls of the shaving cup. This plate is provided with soap holding means, which may be integral prongs or points stamped out of the metal, bent upward so as to project into the

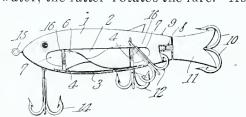


lower side of the cake of soap, and thus hold it securely in position at one side of the bottom of the cup. A lifting member 5 is formed integral with the plate 2, and at its upper end, said lifting member is bent outwardly above the rim of the cup to form a platform 7. Clips 8 extend upwardly from the opposite edges of the platform for holding the brush. These clips can be pinched together or separated, in order to cause them to receive different sizes of brushes and to hold the same in position. A retaining member 10 is also provided to hold the device properly in position, and also to permit the soap plate to be raised in any desired position and securely held against movement. This member consists of a tongue of metal bent downward into engagement with the outer surface of the cup.

The advantages of such an arrangement will readily commend itself to the masculine mind. During the process of shaving, each article is conveniently at hand, and when completed, the cup may be easily rinsed by lifting the soap plate halfway out of the cup, and then allowed to resume its normal position at the bottom of the cup, its elevation permitting the free circulation of air around the interior of the cup. The brush in its horizontal position on the edge of the cup will be found convenient during the shaving, while its bristles remain straight and clean after being dried. Such a device relieves the shaving operation of many of its annoyances and unsanitary surroundings, without the employment of any expensive contrivance, the invention being inexpensive in construction.

Minnow Bait.

An interesting novelty in the line of artificial baits has been invented by Omer F. Immell, of Blair, Wisc. It is in the form of a fish, with a pivoted tail, adapted to move in a most lifelike manner, and with a rotating lure mounted within the body, the whole being so arranged that as the fish moves through the water, the latter rotates the lure. As

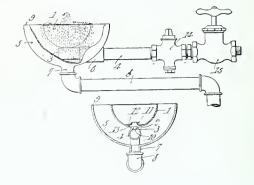


seen by the illustration, there is a transverse opening through the body of the device, and at the ends of this opening are hangers 4, in which are journaled short stub shafts rigidly secured to the ends of a rotating lure 6. This lure is fashioned from sheet metal bent into spiral form. Oppositely disposed channels 7 in the side faces of the body communicate with the opening, the channels at the head permitting access of water to the lure, and those at the tail allowing it to flow away after the lure has been rotated. The rear end of the body is slotted to form arms, and through these arms and the opening 8 extends an upright pintle 9, engaging the eyes of a pair of hooks 10, disposed in a common plane and standing uprightly as the device moves. A tail-shaped plate 11 is secured to the hooks, the barbs being in the same plane therewith and spaced from the upper and lower edges. Gang hooks 12 are suspended from the body near the rear end of the lure, and a hook 14 is pivoted from the lower front end locating the lure within the body, it is protected from injury when the device is struck by a fish, nor is it likely to be fouled by weeds. When a fish strikes at the bait, it will, as a rule. strike the middle, and be caught by the hooks 12; but if it should miss

these, the hooks 10 are likely to impale it. The rotation of the lure gives the whole the appearance of a live fish, with its fins in active motion.

Drinking Cup.

The defect in most of the drinking cups commonly in use is that the drinker's lips are brought into contact with the edge. This renders the cup unhygienic, and prohibits its use in schools, hospitals, and similar public places. A recent patent by Andrew G. Sheak, of Binghamton, N. Y., overcomes this disadvantage, by providing a drinking fountain which absolutely prevents the person drinking from bringing his lips in contact with the vessel. It is sanitary, and it is not necessary to place it over a sink to catch the overflow water. As shown in the cuts, which show a side elevation and a section of the device, the cup has a nipple at its bottom, which screws onto the service pipe, which latter also enters the tube 6 of the overflow bowl 5. In the bottom of this bowl is a neck 7, connected to the waste pipe 8. The rim 9 of the overflow bowl extends above the rim of the cup, constituting a guard and preventing a person drinking from bringing his lips in contact with the edge of the cup. Should he attempt to reach the edge with his lips, the rim of the bowl will so elevate his chin that his nose will receive the column of water that issues from the opening 10 of the nipple. In order to reduce the pressure and spread the jet of water, and to produce a steady column at the center of the cup, a frustro-conical shaped nozzle 11, with a screed top, is provided. The base edge of the nozzle extends to form a circular flange 12, the outer edge of which is secured to the inner walls of the cup.



The wide end of the nozzle is spaced a slight distance from the throat of the inlet 10, forming a chamber in the bottom of the cup which fills with water, and spreads the jet. The converging walls of the nozzle direct the current upward in a thick column, the height of which is regulated by a valve. The fine meshed wire top of the nozzle also spreads the jet. The special shape of the nozzle makes it practical to use a shallow cup, and since less water is used to raise the water to the desired height, economy in water is afforded, which is important when it must flow continually. The use of shallow cups also permits of a number being used on one service pipe.

PATENTS

TRADE-MARKS, COPYRIGHTS, AND DESIGNS.
TWENTY-NINE YEARS PRACTICE.

Send Your Business Direct to Washington. It Saves Time and
Insures Better Service.

My office is close to U. S. Patent Office. Personal attention given. Book "How to Obtain Patents," etc., sent free. Patents procured by E. G. Siggers receive special notice, without charge, in The Inventive Age, an illustrated monthly—twenty-third year—terms \$1.00 a year.

E. G. SIGGERS,

918 F STREET NORTHWEST, WASHINGTON, D. C.

LATEST COURT DECISIONS IN PAT-ENT, COPYRIGHT AND TRADE-MARK CAUSES.

LEWIS CONST. CO. v. SEMPLE et al. (Circuit Court of Appeals, Ninth Circuit. Feb. 7, 1910. 177 F. R. p. 407.)

1. PATENTS-INVENTION-TRANSFER OF DE-VICE TO ANALOGOUS ART.

Pumps and spoil pipes for dredgers belong to arts not so remote that the transfer of a method of lining from one to the other involves invention.

2. PATENTS-VALIDITY AND INFRINGEMENT -Spoil Pipes for Dredgers.

The Semple patent, No. 752,474, for an improvement in pipes for use in carrying sand, gravel, and other material from dredgers and hydrautic or other excavating devices, the pipes having a lining composed of blocks of wood arranged in a circular series pre-senting the grain of the wood endwise at the inner surface of the blocks for a wearing surface, such series of blocks being inclosed in a casing of longitudinal wooden strips, the series of blocks being bound with hoops, and the outer casing wound with wire, discloses patentable invention; but, in view of the prior art, and prior structures in analogous arts, is entitled to only a narrow construction and is limited to the precise structure shown. As so construed, held not infringed by a dredge pipe having a bottom only of similar blocks held in place by flanges on the inner surface of the inclosing

POPE MFG. CO. v. ARNOLD, SCHWINN & CO.

(Circuit Court, N. D. Illinois, Eastern Division. Feb. 14, 1910. 177 F. R. p. 419.)

1. Patents-Anticipation-Prior Publi-

Under the rule that to constitute a prior publication which will invalidate a subsequent patent the publication must contain such a substantial representation of the patented device as would enable any person skilled in the art to make, construct, and practice the invention to the same practical extent as he would be enabled to do if the information was derived from a prior patent, a published illustration and description of a bioycle, showing every detail of a part subsequently patented by another, except that it did not show that a tube for containing the pedal shaft, shown by the patent to be without perforations, and so appearing in the illustration, may not have been perforated or cut away on the bottom or the opposite side not seen—there being, however, nothing to indicate that such was the fact—fulfills all the conditions of the rule, even conceding that there was a patentable difference between a perforate and imperforate tube used for such purpose.

2. PATENTS—ANTICIPATION—BICYCLE.

The Smith patent, No. 392,937, for an improvement in bicycles consisting of a transverse tube for holding the pedal shaft, built rigidly into and made an integral part of the frame, in view of the prior art as dis-closed in actual structures and prior publi-cations in England, is void for anticipation and lack of novelty.

SIMPLEX RAILWAY APPLIANCE CO. v. PRESSED STEEL CAR CO.

(Circuit Court, S. D. New York. Feb. 9, 1910. 177 F. R. p. 426.)

1. PATENTS — CONSTRUCTION—CLAIMS.

An element not claimed therein cannot be read into a claim of a patent to impart to it patentable novelty.

2. PATENTS-VALIDITY AND INFRINGEMENT TRADE-MARKS AND TRADE-NAMES-UNFAIR -CAR TRUCK BOLSTER.

The Bauer patent, No. 593,410, for a metallic car truck bolster, construed, and claims 1, 2, 4. and 5 held void for lack of patentable invention. Claim 6 held to dis-close patentable novelty and invention as limited to the precise construction shown, and also infringed.

MALIGNANI et al. v. HILL-WRIGHT ELECTRIC CO.

(Circuit Court, S. D. New York. Feb. 17, 1910. 177 F. R. p. 430.)

1. Patents — Suit for Infringement — DEFENSES

Where a patent relates to a complex sub-

ject, such as one dealing with the action of vapors and gases and electro energy with their resultant phenomena. a defense of lack of invention or of limitation should be supported by expert testimony.

2. PATENTS — VALIDITY AND INFRINGEMENT — PROCESS FOR EXHAUSTING INCANDESCENT

The Malignani patent, No. 537,693, for a process for producing a vacuum in the bulbs of incandescent lamps, was not anticipated, discloses patentable novelty and invention, and in view of its proved utility is entitled to a broad construction and a corresponding range of equivalents. and a corresponding range of equivalents. Also held infringed.

3. PATENTS—INFRINGEMENT—PROCESS PAT-

To reverse or transpose the steps by which a patented process is carried out or to sub-stitute a chemical substance for another which is known in the art as the equivalent, or which by its chemical action performs similar functions, does not avoid infringe-

HESS-BRIGHT MFG. CO. et al. v. STANDARD ROLLER-BEARING CO.

(Circuit Court, E. D. Pennsylvania. March 10, 1910. 177 F. R. p. 435.)

1. PATENTS—INVENTION.

The fact that an expert, with a patent before him and by the use of the information suggested thereby, is able to construct the patented device from that of a prior patent, does not overcome the presumption of invention arising from the granting of the later

2. Patents—Invention—Ball Bearings.

The Conrad patents, No. 822,723, for a ball bearing, and No. 838,303, for a method of manufacturing and assembling such bearing, cover a device and mode of assembling the same, which are novel and of great utility, and disclose invention.

SIEBER & TRUSSEL MFG. CO. v. CHICAGO BINDER & FILE CO.

(Circuit Court, N. D. Illinois, E. D. March 19, 1910. 177 F. R. p. 439.)

1. PATENTS—SUIT FOR INFRINGEMENT—DE-FENSES.

The improper joinder of applicants for a patent is a purely technical defense in a suit for its infringement, and should not be favored, especially after the patent has been

2. PATENTS - NOVELTY - LOOSE - LEAF

The Nelson, Dawson, and Trussel patent, No. 806,702, for a self-locking loose-leaf binder, while covering a device of utility, is merely for an improvement of an old combination by adopting an improved locking device from the related art of automatically locking boxes, and is void for lack of novelty.

KEEPERS v. AMERICAN ELECTRIC FUSE CO.

(Circuit Court, S. D. New York, Feb. 14, 1910. 177 F. R. p. 442.)

1. Patents—Invention-Uniting of Parts.

Invention is not disclosed by merely making in a single piece a device or connection which previously had been made of separate

2. Patents-Construction and Infringement METHOD OF CONNECTING ELECTRIC WIRES.

The De Mott patent, No. 521,018, for a connection for electric wires, is limited to the precise structure shown. As so construed, held not infringed.

NATIONAL WATER CO. v. HERTZ.

(Circuit Court, D. New Jersey. April 13, 1909. 177 F. R. p. 607.)

Competition—Imitation of Names and LABELS.

Complainant and its predecessors in business, having sold water for many years throughout the United States under the name of "White Rock Lithia Water," were entitled to an injunction restraining defendant from selling water taken from public wells under the name of "Beacon Rock Lithia Water," in bottles of the same shape, size, and color as complainant's bottles, bearing labels of the same general appearance as those used by plaintiff's, and containing other language raising a reasonable but false inference that defendant had no proprietary right in the source from which its water was derived, but was the "sole agent" of such a proprietor in vending the water.

GORMLEY & JEFFERY TIRE CO. v. UNITED STATES AGENCY et al.

(Circuit Court of Appeals, Second Circuit. March 21, 1910. 177 F. R. p. 691.)

1. PATENTS — SUITS FOR INFRINGEMENT— EFFECT OF PRIOR ADJUDICATION IN AN-OTHER CIRCUIT.

The importance of securing uniformity in the law as administered in the several circuits in patent causes is so great that a decision of a Circuit Court of Appeals in one circuit should be followed by that of another circuit in every case where the questions presented can be fairly regarded as doubt-

2. Patents — Infringement — Rubber TIRES.

The Jeffery patents, No. 454,115 and No. 558,956, for pneumatic wheel tires, held not infringed.

CONTINENTAL AUTOMOBILE CO. v. A. G. SPALDING & BROS.

(District Court, S. D. New York, March 12, 1910. 177 F. R. p. 693.)

1. PATENTS— CONSTRUCTION — CLAIMS FOR FUNCTION.

If the claims of a patent are for means sufficiently specified and described in the claims and specifications, they are not invalidated as being for a function by a recital therein of the function to be performed or the result to be secured by such means.

2. Patents-Construction.

Claims of a pateut cannot be broadened by construction or elements imported into them for the purpose of giving them novelty or establishing infringement.

3. Patents-Infringement-Clutch Mech-ANISM FOR AUTOMOBILES.

The Mabley and Franquist patent, No. 883,552, for a combination with other parts of the driving gear of an automobile of a clutch mechanism mounted on a shaft which is removable without disturbing the alinement of the other parts, such removability being the principal object of the invention, in view of the prior art and the proceedings in the Patent Office, must be construed narrowly as an improvement patent only, and confined to the means specified and described. As so construed, held not infringed.

SHEFFIELD CAR CO. v. BUDA FOUNDRY & MFG. CO.

(Circuit Court, E. D. Illinois. March 24, 1910. 177 F. R. p. 713.)

1. Patents—Infringement — Sufficiency OF EVIDENCE.

Evidence alone that a defendant had an infringing device in its possession, without proof that it made, used, or sold the same, does not make out a case of infringement.

2. PATENTS—VALIDITY AND INFRINGEMENT RAILWAY VELOCIPEDE.

The Hovey patent, No. 876,058, for a railway motor velocipede, covers a combination of old elements in a machine to adapt it to be propelled by hand, foot, or motor, and in such feature was not anticipated, and dis-closes invention. It is not infringed, how-ever, by the machine of the Jenkins patent, No. 914,845, which lacks the means of the Hovey machine for disconnecting the motor from the driving mechanism while in motion. 3. Patents-Infringement-Equivalent Parts

"Sprocket Chain Drive." A sprocket chain drive is the equivalent

of a belt drive as a means for propelling a

GOLDEN-ANDERSON VALVE SPECIAL-TY CO. et al. v. MONESSEN FOUNDRY & MACHINE CO. et al.

(Circuit Court, W. D. Pennsylvania. Nov. 26, 1909. 177 F R. p. 723.)

PATENTS—TRANSFER OF EQUITABLE TITLE— INFRINGEMENT.

The Anderson patent, No. 901,222, for valve mechanism, held for an improvement on the device of patent No. 811,813 to the same inventor, the equitable title to which passed to complainant under an assignment of the latter patent by the patentee, "to-gether with any and all improvements which I may hereafter make thereon." Both patents also held infringed on a motion for

preliminary injunction against the patentee and a corporation of which he was an officer, and which had full knowledge of such assignment.

MORTON TRUST CO. et al. v. STANDARD STEEL CAR CO.

(Circuit Court of Appeals, Third Circuit. Feb. 15, 1910. 177 F. R. p. 951.)

1. PATENTS—SUIT IN EQUITY FOR INFRINGE-MENT-DEFENSES.

The defendant, in a suit in equity to enjoin the infringement of a patent is not entitled to a dismissal of the bill on the ground that on notice of the patent by commencement of the suit it dismantled the alleged infringing machine and had not since infringed, where it not only failed to allege in its answer that it did not have other and prior notice of the patent, but contested its validity by allegations and proofs, which was in effect an assertion of its rights to use such machine, and entitles complainant to an injunction on a finding of validity and infringement by the discarded machine.

2. PATENTS — SUIT FOR INFRINGEMENT— PROOF OF INFRINGEMENT.

A combination claim of a patent is never infringed, except by the use of that which embodies every element of the combination, or its equivalent; and where the patent covers a complicated machine, infringement cannot be found alone on a blue print of the alleged infringing machine, introduced in evidence without explanation.

JACOBS MFG. CO. v. T. R. ALMOND MFG. CO.

(Circuit Court of Appeals, Second Circuit. March 7, 1910. 177 F. R. p. 935.)

PATENTS—INVENTION-APPLICATION TO USE IN DIFFERENT ART.

To add teeth and a key with cogs to effect motion of the operating sleeve of a drill-chuck, instead of using the fingers or a spanner, as previously done, does not involve patentable invention, when such method of imparting motion was well known and used in many arts, although the device was one of utility.

FLORENCE MFG. CO. J. C. DOWD & CO. (Circuit Court of Appeals, Second Circuit. April 11, 1910. 178 F. R. p. 73.)

1. TRADE-MARKS AND TRADE-NAMES-NA-TURE OF NAME-DESCRIPTIVE CHAR-

ACTER. The word "Keepclean," as applied to tooth brushes, is descriptive, and therefore, a proper subject of a valid trade-

2. TRADE-MARKS AND TRADE-NAMES-UN-FAIR COMPETITION.

Complainant having manufactured and Complainant having manufactured and sold superior toilet brushes under the name "Keepclean." defendant's manufacture and sale of tooth brushes under the word "Sta-Kleen," printed in the same red letters and dressed in the same character of a package as that used by complainant, constituted unlawful competition; and this not withstanding defendant applied the name withstanding defendant applied the name "Sta-Kleen" to tooth brushes before complainant commenced the manufacture and sale of tooth brushes under its mark.

3. TRADE-MARKS AND TRADE-NAMES-UN-LAWFUL COMPETITION—DECEIT.

Where, in an action for unlawful competition, the style and dress of defendant's article was such as to deceive purchasers into believing they were buying goods of complainant's manufacture, it was not necessary for complainant to show, in a suit for unlawful competition, that innocent purchasers had been, in fact, deceived.

AMERICAN SPECIALTY STAMPING CO. v. NEW ENGLAND ENAMELING CO.

(Circuit Court, S. D. New York. March 14, 1910. 178 F. R. p. 106.)

PATENTS-SUIT FOR INFRINGEMENT - DE-FENSES-ESTOPPEL.

A defendant in a suit for infringement of a patent, which prior to the suit entered into a contract with the complainant in which it conceded the validity of the patent and agreed not to infringe it in the future, is estopped to deny such validity or the fact of infringement prior to the agreement, and can only contest the question of subsequent

MECHANICAL INVENTIONS AND DESIGNS

Pabents for which have been procured through the Patent Soliciting Office of E. G. Siggers, Patent Lawyer, Washington, D. C.

Fred Light, Traverse City, Mich. Wrench.—This invention has for its object to provide a wrench, in which means are provided for quickly adjusting a movable jaw to any desired point, and holding the jaw in that position while engaging a nut or any other article. It consists of a shank having a relatively stationary jaw, a movable jaw slidably mounted on said shank, a handle pivoted to the lower end of said shank, and a spring pressed pawl, one end of which is pivoted to the handle and the other end provided with teeth adapted to engage teeth on the movable jaw, so that when the handle is pressed toward the object engaged, the pawl forces the sliding jaw toward said object and clamps the same between the stationary and slidable jaws.

Isa Chapman, inventor, Eckelson, N. D.: Assignor of one-half interest to P. E. Knudsen, same place. Kettle Cover.-The object of this invention is to provide an improved means for operating the lid of a kettle by the lateral movement of the handle thereof. It consists of a bail pivoted to the receptacle over the hinged lid thereof. a hand grip on the bail, and spaced links hinged to the bail at the ends of the hand grip and pivoted to the hinged lid at spaced points which are in alinement with, but to one side of. the central line of the receptacle and in close proximity to the pivots of the

Robert L. Floyd, Staunton, Va. Mechanism for Elevating Invalids from Beds.—The device covered by this patent is especially designed for elevating invalid patients from their beds, and has for its main object to provide a structure in the form of a telescoping frame-work adapted to be attached to an ordinary bed within the limits thereof and project above the same, and provided with means in the form of webbing, which is adapted to be placed beneath the patient, said webbing being attached to a hoisting means carried by the frame work, and adapted to be raised equally on both sides by one actuation of the hoisting

Samuel H. Stevens. Farmersville, Texas. Device for Assisting Vehicles up Hill.—One of the objects of this invention is to provide a simple, durable and efficient device, designed for use in hilly and mountainous countries, and adapted to assist vehicles, especially loaded teams, in ascending hills and other steep grades, saving fully fifty-five per cent of the pulling power of the draft animals and serving to hold the wagon on any part of the hill without the use of a brake. To this end one or more counterweights are mounted in towers situated on the crest of each hill, at either side of the valley across which the assisting cable extends, the weights being adapted to be raised by the venicle when descending the hill and arranged to descend when the vehicle ascends the hill. Means are provided for connecting the spanning cable with the vehicle, which will permit the ready turning of the front trucks of the vehicle in order that the driver may use either side of the road.

Detlef Witt, Sheffield, Iowa. Stove Pipe Elbow.—One of the objects of this device is to provide a stove pipe elbow with a clean-out aperture, adapted to afford access to both the horizontal and vertical stove pipes

with which the elbow is connected, in to the walls of the receptacle when the order that the said pipes may be readily cleaned without separating them or taking them down. Another object is to provide an elbow of this character in which the means for covering or closing the aperture will re-enforce and strengthen the elbow at the point where it is weakened by the said aperture, and to arrange the parts so that the covering means for the clean-out aperture will be burnt out instead of the elbow, thereby enabling the burnt out portion to be readily replaced.

William B. Homer, Springfield, S. D. Gate.—The object of the invention covered by this patent is to provide an efficient gate, adapted to be easily operated at either side by a person on horseback or within a vehicle without dismounting. The invention comprises a sliding gate supported at each end by an over-head frame-work constituting the track. The track is divided into two sections, and each section is provided with a means for tilting the same, thereby causing the sliding of the gate from open to closed position, or vice versa.

Samuel M. Niblack. New York, N. Y. Traveling Ladder.—This invention has for its main object the provision of a step ladder peculiarly constructed and arranged for use in Pullman sleeping cars to assist passengers in getting into and out of the upper berths thereof, the ladder being suspended from tracks and adapted to be actuated to shift the ladder from one end of the car to the other in front of the berths on either side of the aisle. Another object is to provide means, adapted to be actuated by the passengers, for moving the ladder about the car; and also to provide a lock for preventing the ladder from being moved when it is being used.

Smith Abernathy, Woodstock, Ala. Ore Crusher.—The principal object of this invention is to provide an ore crusher, adapted to crush large rocks and to handle foreign matter without choking, and adapted to successively reduce the material operated on, and capable of agitating theore, so that it may be more easily cleaned. It consists of a series of spaced toothed crushing rolls, arranged in pairs and located at different elevations in the crusher and eccentrically mounted within the casing, the space between the rolls decreasing from top to bottom of the series, and the size of the rolls also decreasing from top to bottom, to effect a gradual reduction in the size of the material operated on.

William H. Carr, Minneapolis, Minn. Combination Tool.—This invention has for its object to provide an extremely handy and efficient tool, which is adapted to be used as a hammer, pipe wrench, nail pull, screw driver, and rule, the hammer face and claw or nail pull of the tool being arranged at the opposite sides of the handle of the tool, and the scale constituting the rule extending longitudinally of the handle, the relation of the parts being such as to cause the hammer face to be thrown behind one edge of the object to be measured on the scale. Thus it will be seen that a number of tools usually indispensable for carpenters, mechanics and the like is combined in a single article.

Sanner E. Ray, McConnellsburg, Pa. Dough Mixer.—This invention has for its object to provide a simple and novel structure for use in mixing, stirring or churning material, particularly that employed for household or culinary purposes: and it comprises a receptacle having a concave bottom and provided on its interior with a rotary, substantially spiral stirrer blade, having outstanding fingers adapted to operate adjacent operating handle is rotated, the free ends of said fingers having overlapping paths of movement.

John L. Wilgis, Upland, Pa., inventor; Robert Ross, Chester, Pa., assignee of one-half interest. Window Screen.—One of the objects of this invention is to provide a flexible window screen in the form of a roll that can be readily applied to a window frame, and connected to the sash thereof, the screen and roller, moreover, when not in use being completely housed beneath the sill, thus being thoroughly protected from the elements. A further object is to provide a structure in which the screen can be locked in any position desired, means being employed which will not only constitute connections between the sash and the screen, but will also act in the nature of automatic actuating mechanism for the locking means when the sash is

James T. Archer, Champaign, Ill., inventor; F. M. Foltz, of Urbana, Ill., assignee of one-halfinterest. Trolley Wheel.—The object of this device is to provide supporting means for a trolley wheel having a lateral rotative movement upon a standard to allow it to track or follow the inequalities of the wire or overhead conductor. The invention consists in providing a trolley arm or harp with a standard rotatable in a plane parallel to the supporting arm, and a spring which will tend to yieldably prevent the rotation of the arm in either direction, and yet will return the wheel to a central position when the strain has been relieved.

Charles Kropp, Mapple City, Mich., inventor; Arthur R. McManus, Traverse City, Mich., assignee of entire right. Rake Attachment for Potato Hooks.—In digging potatoes much difficulty is experienced on account of the grass, weeds and vines, which very often surround or partially surround potato plants, and which it is necessary for the operator to stoop and pull up by hand. This invention provides a rake attachment for the vines, formed from a single strip of sheet metal, bent longitudinally at right angles, one portion being adapted to be clamped or bolted to the back of the potato hook, and the outstanding portion provided with a series of V-shaped teeth forming the rake, whereby the operator may clear away the vegetation without the necessity of stooping.

Derrick B. Hartwell, Roseworth, Idaho. Combined Shovel and Hoe .-This invention has for its object to provide a simple and efficient combined shovel and hoe, adapted to permit a single blade to be quickly arranged in position at the outer end of the handle to form either a shovel or hoe. It comprises a handle provided with a ferrule having a socket adapted to receive a shank, located at the inner or upper end of the shovel blade, the shank being disposed at an obtuse angle with relation to the shovel blade so that the blade may be used as a shovel or turned and used as a hoe, a catch on the ferrule engaging the shank of the shovel and retaining the same in either position in said saw blade. socket.

Carl O. Roe, Wesley, Iowa. Peanut Roaster.—This invention has for its object to provide a simple and inexpensive machine, designed for cooking and similarly treating salted peanuts, blanched almonds, etc., and adapted to rapidly cook the same in hot grease or other liquid without stirring the contents of the device. The machine comprises a receptacle having mounted therein a rotatable cylinder, constructed of screen wire or the like, and provided at one end with a gear adapted to mesh with a corresponding gear attached to a handle, which extends to the outside of the receptacle. The material to be cooked is placed in the rotatable cylinder, while the grease or cooking fluid is placed in the bottom portion of the receptacle, whereby the cooking is carried on with a small amount of

Frank E. Beardsley, Traverse City, Mich. Screwless Door Knob.-The principal object of this invention is toprovide a fastening device for door knobs, whereby the knob may be attached to the spindle without the necessity of screw holes being made in the spindle, and avoiding the expense of drilling and tapping such holes. A further object is to provide a device, the use of which will dispense with the lead bushing in the knob, as well as the usual screw and washer, and allow the knob to be adjusted accurately without the use of tools and by any unskilled workman. The invention consists in providing a. hollow knob with one or more inwardly projecting tongues or pawls, preferably struck up from a sheet metal blank, which pawls project upwardly and permit the spindle to be inserted into the knob, when the knob is drawn jam upon the spindle, thus preventing the withdrawal of the knob, provision being made for the insertion of the key through the sides of the knob, whereby the pawls may be raised when desired to permit the knob to be removed.

Thomas C. King, Purvis, Miss. Automatic Safety Automatic Safety Switch. — The present invention has for its object to provide an automatic safety railroad switch, adapted to be applied to various switches, and capable, should a switch be carelessly left open, of enabling the same to be automatically closed by means carried by approaching trains, thereby eliminating the accidents resulting from trains running into open switches. A further Object is to provide a switch, adapted, when a train leaves a siding and enters the main line, of automatically closing the switch after the train, thereby obviating the necessity of closing the switch by hand. A further object is to provide an automatic switch which will dispense with the switch signal lights between stations for indicating the position of the rails at night.

James I. Pauley, Anchor, W. Va., inventor; Jefferson Duty, Rector, W. Va., assignee. Saw Handle. - The object of this invention is to provide a simple, inexpensive and efficient device, adapted to be quickly applied and easily removed from a saw blade, and capable of firmly gripping the same with a strong hold, means being provided in the shape of a spring to maintain the handle-tight at all times and also to prevent breakage of the saw blade. The device consists of a relatively fixed saw blade engaging member adapted to be arranged upon the upper edge of a saw blade, a handle fulcrumed on said member, and a resilient link engaging the lower edge of the saw blade and connected with the handle, said link exerting a yieldable pressure on the

Humphrey H. Grobes, Jersey City, N. J. Pneumatic Hammer.—This invention has for one of its objects to improve the construction of pneumatic hammers, and to prevent the bit or engaging member of a hammer from being fired or driven out of the barrel or casing by the action of the hammer. A further object is to provide a device, adapted to readily permit the removal of the bit or engaging member when it is desired to change or detach the same for any other purpose.



Advertisements inserted in this column for 10 cents a line (about 7 words) each insertion. Every new subscriber sending \$1.00 to The Inventive Age will be entitled to the Age one year and to five lines three times free. Additional lines or insertions at regular rates.

FOR SALE-U. S. Patent No. 892,193, dated Jan. 30, 1908. Automatic cut off for natural gas to prevent explosions. Excellent proposition. Write for particulars to, J. H. Stanton, St. Catharines, Ont., Canada.

F OR SALE—Patent No. 945,812, dated Jan. 11, 1910. Cheapest, simplest and most efficient hand-operated sanitary cow-milking machine. Good proposition, for sale or on royalty. Address. R. D. Roth, Gettysburg. Pa. my

FOR SALE—U. S. Patent No. 972,371. A new and very unique card game. Scientific, educational and fascinating; 48 cards; three color patriotic illustrations and rules; all in neat gold lettered cases. Sample 50 cents, post paid. Address, W. A. Hammett. Corsicana, Texas.

FOR SALE—Two patents in U.S. and Canada. Patent No. 965,411, Combination Cultivator and Furrow Maker. Patent No. 971,218. Rotary Harrow, Based on entirely new and original idea. Will sell outright or on royalty. No reasonable offer refused. Address, Sigmund Schaller, Box 63, Haddam, Conn.

FOR SALE-U. S. Patent No. 974,411; Canadian Patent No. 129,289, Combination Rail Brace and Nut Lock. Prevents low joints, rails spreading, rails turning laterally. All nuts locked against turning movements, avoiding expense of track walkers. Can be used at either joints or intermediate points to best advantage, thus avoiding serious wrecks. The best combination brace yet invented Will consider any reasonable offer, either outright or royalty and part cash. Address, C. Maunders, Jackson, Minn.

FOR SALE-U. S. Patent No. 967,746, Sash Holder. Will sell outright or on royalty basis. For particulars, address Frank E. Erickson, Marquam, Oregon.

FOR SALE—Patent No. 965.429, dated July 26, 1910. Steel Rail Joint. Address, William Arndt, 711 South Eleventh Street, Goshen, Indiana.

FOR SALE-Patent No. 969,302. Switch Operating Apparatus. Motorman can arrange switch with foot without leaving platform of car, whether car is going at a fast or slow speed. For particulars, address Franz Schad 309 Elm St., West Hoboken, N. J.

FOR SALE-U.S. Patent No. 972,127. Animal Trap. Will sell reasonably. Investigate and make me offer. Address, A. L. Newell, Route No. 1, Frost, Texas.

For Sale-Patent No. 970.904, dated Sept. 20, 1910. Post-mold for concrete posts. For stretching the reinforcing wires before filling molds. Canadian patent pending. Address, G. H. Fenske, Clark, Missouri.

FOR SATE—Canadian Patent No. 125,147, Locking Whip Socket. For cash only to highest bidder the last of my foreign patents. For further information address, Severin Lilland, Jewell Junction, Iowa.

For SALE—Patent No. 969,081. Drill sharpener for hand steel for mines and prospectors. Very simple, and can be manufactured at small cost. Write for terms. Address, R. A. Schmidt, Bayard Station, New Mexico.

For Sale-Patent No. 967.467. A front wheel truck for self binders and general farm traction purposes. The machinery may be arranged to combine or transmit power to front or hind wheels as needed for greater pulling power. Has been used onbinder for three seasons. Saves time and horses, and makes ideal square corners. Write for information and terms for shopright. Address, T. E. Lind, Moose Jaw, Sask, Canada. apr

FOR SALE—Foreign patents for The Wells Butter Worker, in Canada. Mexico, Belgium, France and England. Address, Miss Ella Wells, R. F. D. No. 5. Shelbyville, Ky. mar

For SALE — Patent No. 547,581. Windrow Baling Press. A great labor and hay saver. Simple yet powerful. Address, Jacob Barens, Altus, Ark.

For Sale or royalty—U.S. Patent No. 968,769. An Improved Electric Center Grinding Machine. This machine is superior to all other machines on the market. For particulars write, William A. Ireland, No. 47 Johnston St., Newburg, N. Y.

FOR SALE for cash, or part cash and royalty—Patent No. 960,540, dated June 7, 1910.

Pruning Implement. An entirely new and original idea. For particulars apply to I. E. Guest, 2708 Champa St., Denver, Colo.

FOR SALE-Patent No. 957,561, dated May 10, 1910. Quilting Frame. Something every family needs. The handiest frame ever made. Will give a good commission if sold soon. If interested write me. Fred Jakob, Bartley, Nebr.

FOR SALE - U. S. Patent No. 947,865, and Canadian Patent No. 127,371, on a Door Catch. Either outright or on royalty. Address, William D. Taubert, care Alfred Nuffer, Hills, Mann.

FOR SALE—Patent No. 959,481, dated May 31, 1910. Automatic Rivet on Scissors. Cuts clean, saves worry and time for women. Part cash and royalty. Address, John W. Dowden, Box 122, Reeves, La.

POR SALE—Patent No, 931,287. Permutation, Keyless Lock. May be used on trunks or suit cases; cannot be picked; no danger of losing key; profitable invention if properly handled. No reasonable offer refused. Address, Wm. Erhardt, 112 Munson Street, Astoria, Long Island, New York.

FOR SALE-Patent No. 960,942, dated June 7, 1910. Automatic Pump. Will sell outright at a reasonable price. Address, Samuel J. Jackson, Pleasanton, Alameda County, Cal.

FOR SALE—Patent No. 962,161, dated June 21, 1910, Gas burner for furnaces. Uses one-fourth less gas than other burners; will not flash out in your face when furnace door is opened. Will sell outright or on royalty. Address, Thomas Mowcomber, Elkland, Pa. mar

FOR SALE—Patent No. 963,417, on royalty or outright. Device for Hanging Storm Windows and Screens. The only inventiou of its kind. Can be manufactured at small cost. Address, Edward C. Brown, Bismarck, North Dakota.

FOR SALE — U. S. Patent No. 958,672, and Canadian Patent 126,790, on Sell-Waiting Tables, Address, Karl J. Olson, P. O, B. 392, Gladstone, Michigan.

P OR SALE or exchange for real estate—U. S. Patent No. 950,630, dated March 1, 1910; Canadian Patent June 6, 1910. Trolley Poles, Can't come off wire. Very good invention, For particulars and price address, Henry Brod, St. Charles, Mo.

FOR SALE—Patent No. 959,309. Car Fender. Can be manufactured cheaply. Will sell outright or on a royalty basis. Cheap for quick sale. Address, A. H. Carter, 2235 Cutter Ave., Canton, Ohio.

FOR SALE — U. S. Patent No. 939,727 and Canadian Patent No. 155.875. Snap Hook. Automatic adjustment and easy operation; capable of various uses and is self-locking. Will sell outright, or for any state or county. Address, Matti Maki, Grelland, North Dakota.

WANTED.

WANTED-Agency propositions. What have you to sell? Address, Ernest Morse, Luverne, Minn.

Wanted—Two or three persons with some capital to correspond with a patent owner of a new meritorious article. Practice on model very satisfactory. Will not sell patent but will join in company. Address, F. D. F. Box 28, Waterbury, Conn.

WANTED—Not for sale but want a company to manufacture my manure loader on royalty, Patent No. 918,695. Address, Lars C. Peterson, Osage City, Kansas.

WANTED—A company to manufacture a bag holder made of sheet iron. U.S. Patent No, 968,349, dated August 23, 1910. Will have patent for Canada in a short time. Address, Louis Hanson, Cottonwood, Idaho, apr

Wanted-Four 4 men to loan me \$100 each, for four years, at 6 per cent to help me to push four 4 good paying toy inventions, for which I will return to each of them their loan, and I will give also to each loaner 10 per cent of all the income from sale of said patent inventions in whatever way I may dispose of said patents. Here is your chance. Who will accept. Address, E. W. Barton, No. 35 Carroll St., Binghamton, N. Y.

Electrical Review and Western Electrician

Published weekly from the center of the industry, this publication is in the best possible geographical position to gather and present the most important and interesting news of the entire electrical industry.

SUBSCRIPTION PRICE

U. S. \$3.00 per year, Canada \$1,00 per year, Foreign Countries \$6.00 per year. Sample Copy Free

It is seen and read by practically every buyer of electrical material in this country and abroad. Advertising rates on application.

ELECTRICAL REVIEW PUBLISHING CO., 507 Marquette Bldg., CHICAGO.

A NEW BOOK FOR INVENTORS

Patents and How to Make Money out of Them,

By W. B. Hutchinson.

This is the only book published, giving a detailed and full account, from the author's actual experience, of just what steps are necessary from the time the invention is conceived, to the time it is sold, with a clear and concise resume of the law and practice, legally and commercially, of trade-marks and copyrights. It also tells accurately How and What to invent. How to sell Inventions, Place them on the Market, Interest Capital in them, and to successfully Promote a Stock Company. It also contains an index of forms worth double the price of the book to any one interested.

ELEGANTLY CLOTH BOUND.

GOLD STAMPED. \$1.00 Postpaid.

Sent with one subscription to AGE for \$1.50.

Or will sell separately.

Address— The Inventive Age Pub. Co.,

918 F St., N. W. WASHINGTON, D. C.



A VALUABLE OFFER TO INVENTORS.

A Complete Outfit of Printed Matter for \$20.

- 1. A zinc etching of your invention for use in printing letterheads, envelopes, circulars, etc.
 - 2. One thousand printed circulars.
- 3. Five hundred envelopes with your name and address printed in the corner.
- 4. Five hundred letterheads with a cut of your invention, and your name and address neatly printed thereon.
- 5. A list of manufacturers in the special line of your invention.
- 6. A form letter to be followed in conducting your correspondence with manufacturers and others.
- 7. Four dozen deeds useful in selling state, county, town or shoprights.

 Address:—

INVENTIVE AGE PUBLISHING CO. Dept. O. WASHINGTON, D. C.

ATTENTION INVENTORS!

LISTS OF MANUFACTURERS FURNISHED.

We have increased our facilities for furnishing lists of manufacturers, and now cover every line of industry. The names are obtained from well known directories.

Our charge for each list is one dollar.

In ordering, please state specifically the class of manufacturers desired. Address: Inventive Age Pub. Co., Dept. M. 918 F. St., Washington, D. C.

Every subscriber when sending \$1.00 is entitled to a free advertisement, not exceeding five lines, of any patent in which he may be interested. The ad, will be inserted three times,

THE INVENTIVE AGE PUBLISHING CO., Washington, D. C.
I herewith enclose \$1.00 for one year's subscription to
"THE INVENTIVE AGE."
I also enclose ad. for insertion in the (Patents for Sale*) (Want*) column of your paper.
NAME
P. O
State

*Please indicate in which column you want the ad. inserted.

N. B.—Remit in the way most convenient.

479 Inventive age

Established 1889. Published monthly by

THE INVENTIVE AGE PUBLISHING CO.,

National Union Building, 918 F Street, N. W., WASHINGTON, D. C.

THE INVENTIVE AGE is sent, postage prepaid, to any address in the United States, Canada, Mexico, Hawaii, and Porto Rico, for One Dollar a year; to any other country, postage prepaid, One Dollar and Twenty-Five Cents.

Correspondence with inventors, mechanics, patentees, and manufacturers, is invited. The columns of this journal are open for the discussion of such subjects as are of general interest to its

Technical matter is particularly desired. We want practical information from practical men. THE INVENTIVE AGE is independent.

Special facilities for furnishing cuts of any patented device together with descriptive article. Business specials 10 cents a line each insertion: 7 words to the line. No advertisement less than 25

Address all communications to

THE INVENTIVE AGE PUBLISHING COMPANY, WASHINGTON, D. C.

Entered at the Post-office as 2nd class matter.

WASHINGTON, D. C., MARCH I, 1911.

A Patent Court of Appeals.

Renewed interest in this proposed new court is furnished by the hearings given before a sub-committee of the United States Senate Judiciary Committee, when representatives of the American Bar Association and the Patent Law Association of the District of Columbia appeared and advocated the passage of the bill for the establishment of the United States Court of Patent Appeals, which will constitute the sole appellate court in all litigation relating to patents. The evils connected with the present procedure in patent litigation are evident to all those who have come in contact with it. Since patent cases arise under the Federal laws, all such cases must first come up in a United States court, and when appealed therefrom, they go to the United States Circuit Court of Appeals for the circuitin which the case was first tried. There are nine circuits in the United States, and necessarily nine Circuit Courts of Appeals, each of co-ordinate jurisdiction, and which do not feel themselves bound by each other's decisions except through a spirit of comity. The result is that litigation on the same subject arising in States covered by the different circuits is frequently decided in different ways. This necessarily creates great confusion and weakens the effect of the decision in any particular court.

The object of the present bills, which were introduced in the first session of the present Congress and are now pending, is to create a United States Court of Patent Appeals, national in character, which tribunal different circuit courts, so that there will be only a single appeal from the trial court to the court of the last resort. The bill is in line with present judicial progress, which aims to provide but a single opportunity of appeal, and the proposed court would, moreover, constitute a tribunal for this purpose superior to any which now exists.

Senators Nelson, Sutherland and

Overman compose the sub-committee which is considering the bill. The bill proposes to create a court of five judges, the chief justice to be appointed by the President with the consent of the Senate, the associate justices to be designated to act on the patent court bench by the Chief Justice of the Supreme Court of the United States, and to be taken from among the federal circuit and district benches. If this tribunal is created, it should be provided that the judges sitting therein shall have more than legal qualifications; they should have some familiarity with scientific and technical subjects.

Every inventor, every manufacturer, and, indeed, every one who makes use of any patented article, must be interested in having the present condition of affairs improved by the creation of such a court, and should make some effort to let our legislators know the sentiment which exists generally on this very important subject. Under the present system, practically the same suit can be brought in each of the nine circuits and fought to a determination in each. If this bill passes and the new court is created, a multiplicity of suits will be avoided and the business of the Federal courts will necessarily be lessened. It would be highly desirable if, at the same time such a court is created, means could be taken to expedite the hearing and decision of all patent cases, many of which in the past have dragged along for an almost interminable period.

The Selden Patent Declared Invalid.

No patent litigation of recent years has attracted the attention that this case has. The Selden patent was issued in 1895 to George B. Selden, a patent attorney, of Rochester, N. Y. His application was filed in 1879, more than sixteen years before the grant was made. The principal claim of the patent was as follows:

"The combination with a road locomotive provided with suitable running gear including a propelling wheel and steering mechanism, of a liquid hydrocarbon gas engine of the compression type, comprising one or more power cylinders, a suitable liquid fuel receptacle, a power shaft connected with and arranged to run faster than the propelling wheel, an intermediate clutch or disconnecting device, and a suitable carriage body adapted to the conveyance of persons or goods."

By a systematic course of prosecution of the application with which shall decide all appeal cases from the every skilled attorney is familiar, Selden kept his application pending in the Patent Office, watching the development of automobiles, and gradually widening the scope of his claims to meet each change in the construction of the automobile. Finally, when he felt that the automobile had reached a high state of commercial development, he had his patent issued. Instantly it was seen by experts that the claims of his patent were so broad

as to cover every automobile wherein a gasoline engine formed a part thereof. The question arose among automobile manufacturers, what shall be done? Selden, by patient work and wise management, formed a combination of leading manufacturers of automobiles, and licensed each of the manufacturers forming the association under a royalty proposition. This was the beginning of what was later known as the Association of Licensed Automobile Manufacturers.

From time to time, when competing companies came into the field, they were forced to join the association by threats of suits for infringement, or they were driven out of the business entirely, if it was thought that the machines, which they proposed to manufacture, were not a desirable product. As a result, the Association of Licensed Automobile Manufacturers grew in strength, and the prosperity of Selden kept apace with its growth. Selden is reputed to be a millionaire today, and this is due, not so much to the inherent value of the invention he made, but to its prosecution through the Patent Office and skillful management after the patent was obtained. Selden displayed his genius as an organizer in forming the Association of Licensed Automobile Manufacturers. When this association was formed, it was pledged to maintain the validity of the patent and fight for its validity in the courts. Indeed, a certain sum was put aside each year to constitute a defense fund. Each member of the association was required to pay a royalty to Selden, as well as a certain sum to this defense fund, and it is readily seen that as the association grew in numbers, the defense fund grew larger in harmony with the profits of the pat-

It was not long before the association became so powerful both in numbers, influence and wealth, that it seemed the height of folly for any manufacturer to attempt to resist the combination. Once in a while some company would start out with the object in view of fighting the association, but they were either driven to the wall, or forced to compromise and come into the association. It was not until the Ford Motor Company came into the field that any serious opposition was felt, and it was against the Ford Motor Company, John Wanamaker and others, that the first case was brought to a hearing, the other prior suits having been settled out of court. This hearing was had before Judge Hough of the Circuit Court for the Southern District of New York in September 1909, and the Judge decided the case against the Ford Motor Company, and held that claims 1, 2 and 5 of the Selden patent were infringed by the Ford machine. An appeal was taken to the Court of Appeals of the Second Circuit, and that court recently rendered a decision declaring the Selden patent invalid.

While the association is now taking steps to apply for a writ of certiorari, with a view of having the case sent to · the United States Supreme Court for final decision, it is not believed that

that tribunal will grant the writ, for the Supreme Court has shown a disposition to keep patent cases away from its court as much as possible. The fact is the Selden patent will expire November 5, 1912, and by the time the Supreme Court would render its decision, the patent would have expired.

There is believed to be no doubt that as a result of this decision, automobiles will be cheaper after this year, but they will probably not be so cheap as to put them within reach of the laboring man. The prices have been fixed for the present year and the decision cannot alter them. The factory production in 1912, however, will be at the maximum, and then it is expected by unlicensed manufacturers that prices will have to come down. It is a well known fact that the litigation over the Selden patent served to keep much capital out of the industry, and it is believed that the determination of this patent question will cause a tremendous development in the manufacture of automobiles, and bring a large influx of capital into the business, for capitalists always fight shy of patent troubles.

Another Patent Selling Swindle Exposed!

For several months past, patentees have been circularized from one source with two branches; one circular printed on a letter head bearing the imprint "Sheboygan Electric Machine Co., Milwaukee, Wis.," and the other having no letter head, the letters being signed simply "Robert R. Stein" and written from Washington, D. C. The circulars issued under the name of the Sheboygan Electric Machine Co., were all of the same tenor, and expressed to the patentee a desire to purchase the patent, though before the Company would take "the financial risk," it wished to have a competent investigating company look over the files in Washington with regard to the scope, validity and title to the patent. In the same circular it recommended the American Estimating Co., of Washington, D. C., as a reliable concern, and suggested to the patentee to write that company and obtain a report on his patent. When the patentee wrote to the Washington concern, he was informed that his patent was of great merit and was asked to send a specified sum to cover the cost of the investigation. When this was done, the Milwaukee concern would no longer be in the market for the patent. It had other fish to catch.

It was not long before the complaints against these two concerns, one located in Milwaukee, Wis., and the other in Washington, D. C., became so numerous that the attention of the Post Office authorities was called to the matter. After investigation, it turned out that a party by the name of Ernest Stein, employed in Milwaukee as a bookkeeper, was the only person interested in the Sheboygan Electric and Machine Company. He operated in a single room in an office building usually at night when he was not working as a bookkeeper. Upon being

confronted by the Post Office inspector on the 14th of January, 1911, and arrested by the United States Marshal for the use of the mails with the intention to defraud, he admitted that he had never had a factory, had never manufactured anything, and had no means to establish a factory, and that the American Estimating Company at Washington, D. C. was conducted by his brother, Robert Stein.

Thus it will be seen that two men, one in Milwaukee, Wis., and the other in Washington, D. C., concocted the scheme to defraud inventors by one of the parties pretending to be a manufacturer and to be interested in patents, but suggesting that the second party be employed to investigate the title and validity of the patent before the first party could be induced to purchase the patent. After a hearing before the United States Commissioner on the 15th and 17th of January at Milwaukee, Wis., Ernest Stein, who conducted the Milwaukee end of the swindle, was held to await the action of the United States grand jury, and in default of \$2000 bail was committed to jail.

We have no doubt that many of our readers have received circular letters from both parties. If you have any envelopes, letters or other papers that were received from either the Sheboygan Electric Machine Company, Milwaukee, Wis., or the American Estimating Co., Washington, D. C., or Robert R. Stein of Washington, D. C., please collect all such matter, mark your name on each piece, and write a statement of all transactions with the said concerns and mail the matter at once to Ralph Bird, Post Office Inspector, Milwaukee, Wis.

The administration is engaged in a praiseworthy effort to clear the mails of these fraudulent concerns, and it is the duty of every citizen to co-operate and assist the authorities in bringing such parties to justice, in order that others may be deterred from engaging in such swindling plans. The grand jury will meet in April or May next, and, therefore, the response to this request should be prompt.

Aerial Railway.

The first aerial railway is in course of construction in Germany, but it is doubtful if it will have many competitors. The idea, while ingenious, is too chimerical for practical use. The device consists of a balloon and carriages, one or more of which is attached to the balloon, which latter serves the purpose of eliminating the weight of the carriages. Regulation is accomplished by the use of water ballast. The shape of the balloon is a cylinder with cones on both ends. The carriages are fastened below the balloon; their construction is as light as possible, rounded in front and rear to minimize the air resistance. Lighting and heating is effected by electricity. The movement is accomplished by motors, the axles of which are prolonged, carrying on their ends wheels which press against cables, one on each side. Electricity is brought to the motors from a wire with trolley contact beneath the carriages.

Swimming Machine.

A ten-pound swimming machine that may be packed in a suit case is the invention of a Frenchman. It is a safe and rapid semi-craft for the man who swims or the man who does not. At the front of the apparatus is a cylindrical metal float, with conical point and a depending rudder. At the rear is another metal float, with stirrups acting upon a propeller, the two ends connected by a wooden bar, on which the swimmer lies as if on the water. Kicking with his feet and alternately pushing and pulling with a cross handle bar just back of the forward float, the swimmer on this machine gets a maximum of exercise while making a speed impossible to the ordinary swimmer on the open water.

Taking Paper from Walls.

One of the most tedious and difficult tasks of the paper hanger has been the scraping of old paper from walls before putting on new. The great drawback about wall paper is that it is a germ trap if left on long, and yet it is very hard to remove. In some cities laws have been passed prohibiting the repapering of rooms without first scraping off the old layers. The new method is to steam the paper from the wall. By this means, four or five layers can be taken off as easily as one, and the work can be done almost as fast as the steaming pan can be drawn over the wall.

A heater placed in the center of the room and operated by oil, gas, etc., generates steam, which is conveyed through a hose to a steaming pan. Two of these pans are provided, one being as wide as the ordinary width of wall paper, and the other being adapted for use in spaces of contracted or awkward size. Both are simply held against the wall and drawn down the strip of paper from coping to baseboard, the operator pulling the paper away from the wall as fast as the pan is drawn over it. This apparatus is said to remove the paper from a room of ordinary size in from one to two

Gate to Stop Runaway Horses.

A device to check runaway horses has been devised and put into successful operation on the Williamsburg Bridge, N. Y., which on account of its wide roadways and lack of trolley cars has acquired an unusual record in the matter of runaways, far exceeding the Brooklyn Bridge. In four years 185 runaways have taken place, with 53 horses killed and 47 injured, and 96 persons hurt. Last April a runaway gate, the idea of a laborer on the bridge, was put into operation. The device is described in Popular Electricity as having two leaves of plank, 40 feet long and about 7 feet high, mounted on wheels. The officer in charge needs only to close a switch, which sets in operation motors which cause racks and pinions to push the two ends of the leaves toward each other, forming a V with the opening facing the direction from which traffic is coming, except a space through which a man may pass, at the apex. In the first runaway which occurred after it was installed, the horse started 150 feet away, and by the time it had reached the gate the leaves were nearly closed. The horse, breaking away from the harness, passed through the opening uninjured, leaving the wagon in the apex on the V. When not in service, the leaves swing back parallel with the sides of the bridge.

Telegraph Typewriter.

The long distance typewriter has arrived. You can now typewrite all over the country, as well as you can telephone or telegraph. The typewriters are of a familiar pattern, except that there is a round case on top which holds the special mechanism. As far as the operator is concerned, the message is dispatched in the same way that a typewriter is run, and all that is seen on the machine is the typewheel, spinning to make the record. With half the number of parts that the standard typewriter has and the keys responding to the lightest touch, any one can use it. In the hands of a skilled writer, a speed of 115 words a minute can be maintained, while an ordinary operator with no special skill can transmit from 50 to 60 words a minute at will. All this the inventor claims.

The machine is so built that by the operation of the keyboard on the typewriter the message is transmitted and reproduced on any and all machines that may be attached on the circuit, or it can be reproduced on one, two or more machines to the exclusion of the others when necessary. In other words, if attached to a telegraph wire in one city, and it was desired to send a message to every agent in every office of another, it would be sent simultaneously, received by the agents and recorded, all in plain English. On the other hand, if the message were only intended for one of the operators to receive, by the simple turning of a switch every other machine would be cut out of the circuit.

A letter or character struck on a typewriter in the sending office is immediately recorded on the typewriter in the receiving office. This requires but one depression of the key, as against several muscular impulses necessary to send each character by the Morse system. The expert Morse operator sends about 30 words a minute, while the typewriter transmits messages more than three times as fast. Mistakes are eliminated, because the correctness of the message is not dependent on the proper translation of a combination of sounds represented by dots and dashes ticked off in the receiving office. If a mistake is made, it will appear on the record in front of the operator, and by means of a back space adjustment the machine will move the message back to the error, the writer will then depress the letter X, mark out the mistake, and correct.

Another advantage is that the telegraph typewriter is proof against weather and atmospheric changes of any kind, and requires no relay when working at a distance of 1000 miles or under. It can be operated over telegraph or telephone wires (without disturbing the conversation going on over the phone at the same time,) or over any fire, police, or messenger call wire, and is not even influenced by outside electrical conditions. By "tuning" the typewriters differently, four machines can be put on the same wire, and four different operators can send their messages at once.

This device has already been described in the columns of the INVENTIVE AGE, but the practical application of it deserves further mention. Experiments have been carried on with it for over a year, and cover tests between New York and Philadelphia, Hartford, Springfield, Mass., and Pittsburg. It is now being used regularly between Chicago and Detroit.

Speed in transmission is only one of the many advantages of the new system. Under the present method, all messages must be translated from English into Morse before being sent, and at the receiving end they must be retranslated and written in English. The telegraph typewriter does not require the presence of an operator at the receiving end, and the sender can transmit messages as rapidly as a letter can be written on an ordinary typewriter. Anyone who can use an ordinary typewriter can telegraph. and the turning of a key transforms a receiving machine into a sending one.

Remedy for Bores.

Japan's progress in civilization has been watched with interest by the world. She is now credited with an invention which, if adopted, will put her distinctly in advance of all other countries. It is intended to achieve the Utopian result of getting rid of bores in public assemblies. In most foreign parliaments, a man who wishes to make a speech does not simply rise and address his audience from his desk, as in our Congress, but he advances to a platform near the chair of the presiding officer, and delivers his oration there. The inventor proposes to have this platform balanced on a sort of elevator arrangement. A small pipe is to run from each member's desk to a point under the platform, and if anyone thinks that the speaker has talked long enough, all he has to do is to drop a leaden ball into this pipe, and it rolls down into a hopper. As soon as a sufficient number of members have sent their bullets down the chute to tip the scales, a system of weights comes into operation and the platform sinks into the basement, carrying the tiresome orator, and thus effectually cutting off the flow of words. The beauty of the system is that in this way the members can express their opinion of the speaker without its being known by him or anyone else. A similar plan is proposed for registering votes, so as to avoid the delays of calling the roll so often.

THE INVENTIVE AGE contains sound advice to inventors and patentees. For lack of such advice many have lost money. Subscription price, one dollar a year.

CLASSIFIED list of Patents issued during the month appears in each issue of the INVENTIVE AGE. This keeps inventors and manufacturers posted in the art in which they are most interested. —We will send, postpaid, to any address, printed copies of any U. S. patent, with specifications and drawings, * upon receipt of 10 cents per copy.—Please give correct data in ordering.—Address, THE INVENTIVE AGE PUBLISHING CO., 918 F St., N. W., Washington, D. C.

LIST OF PATENTS

-:0:--

Issued November 8, 1910.

MECHANICAL PATENTS.
(Continued from February Number.)
Go-carts, Canopy for folding
Grading and ditching machine
Grinding machine. B. M. W. Hanson Grinding wheel, &c L. R. L. Wallen Grubber and cultivator, Combined grass C. W. Stark Gnn, Breech-loading J. A. Ricketts
Hair-singeing device Electrical
Hammer, Drop. B. and J. Brett Harrow, Rotary P. N. Monn Harrow-tooth holder J. H. Hoard Harvester, Cotton R. L. Edwards Harvester or like machine, Stripper.
Hat fastener
ratus for manufacturingA. G. Brown HeaterW. J. Dossey Heating and ventilating system, Combined L. C. Smith Heating body, Knitted electricM. Hefter HingeJ. Wright HingeJ. Houer HingeJ. Houer
Heating body, Knitted electric. M. Hefter Hinge. d. Wright Hinge. J. Houer Hinge, Door. P. E. Howard Hinge, Double-swinging-door. O. E. Haliu Hinge, Molding-flask sliding. S. D. Robinson
S. D. Robinson Hoe. J. S. Bilsland Horseshoe-calking machine. W. H. Lee et al Hose coupling. L. Lancaster
Hose reel
Hydrogen peroxid, Stable mixture for producing (3 pats.)R. Gruter et al
nal
Internal-combustion engine. G. M. Perlewitz Junction box. E. T. Greenfield Labeling machine. G. Brand et al Lace fistener. H. F. Levi
Ladder, Metallic Ferguson Lamp, Arc P. Hanisch Lamp body, Nevust O. Foell et al Lamp burners, Globe or chimney holder for
for
Lamp extinguisher
Lamps, Electric-light attachment for gas J. C. Stearns Latch. J. S. Johnson
Lamps, Electric-light attachment for gas. J. C. Stearns Latch. J. S. Johnson Lawn sprinkler. II. L. Dietcher Leather blanks, Apparatus for uniting J. A. Millican Lens-grinding apparatus. E. A. Haumett
Life-saying device. J. J. Rectenwald Litting jack. R. J. Northam Lightning arrester W. Butler Limb, Artificial. J. A. Galvin Load binder (Reissue) R. L. Boyd Locomotive. S. M. Vauelain
Load binder (Reissue)R. L. Boyd LocomotiveS. M. Vauelain Loom, HandM. P. and D. Todd Loom-shuttleJ. La Palme
Lubricating bearings, Means for
Locomotive
Measuring and recording device, Cloth M. Shalausky
D. C. Puderbaugh Measuring binF. B. Carroll et al Mechanical agitatorC. S. Batdorf Mercerizing, dyeing, or like treatment of
loose or woven cotton or other vegetable fiber, Machine forJ. II. Robson Metal-creasing machineH. C. H. Walsh Metallic fabric, Making (2 pats.)
Mandrel, Clutch-grip. M. Jaeger Mangle. W. Leist Mannre drill. K. Beckmann Measuring and recording device, Cloth. M. Shalausky Measuring apparatus, Liquid. D. C. Puderbaugh Measuring bin. F. B. Carroll et al Mechanical agitator. C. S. Batdorf Mercerizing, dyeing, or like treatment of loose or woven cotton or other vegetable fiber, Machine for. J. H. Robson Metal-creasing machine. H. C. H. Walsh Metallic fabric, Making (2 pats.). M. and L. S. Lachman Mining measure. A. Cronwell Mixer and conveyer. G. E. Barnette Mold. S. L. Shepard Molder's flask. E. T. Mellugh Motion-transmitting mechanism, Reciprocating. D. Roberts Mower wheel, Lawn. J. H. Aub'e Musichesf turner. G. Regondie
Motion-transmitting mechanism, Reciprocating. D. Roberts Mower wheel, Lawn. J. H. Auble Music-leaf turner
Musical instruments, Electrical mechanical player for. J. F. White Nail. C. Hansen Nut, Axle. J. B. Wismer
Nut, Axic

Nut lock. C. Glaum Nut lock. E. W. Taylor Nut lock (2 pats.) J. R. Armstrong Nut lock L. Blessing et al	Sharpening gravers or other tools, Holder for M. J. Collins Shears and scissors F. Meissner Shears for cutting iron J. Bilesik
Nut lock.T. F. A. MaherNut lock.J. V. SohnNnt lock.J. H. SntherlandOil bnrner.J. M. Howze	Sheave, SafetyW. D. Lockwood Sheet-feeding machineR. E. and A. Kemper Shellac from stick-lac or the like, Obtain-
Oil barner, CrudeL. O. Hudson Oil or gas furnace, Fuel. W. S. Quigley Oven, BakingB. Nino Oven, Electric bakingJ. I. Ayer et al	ing pure. G. J. Fowler Shelving. P. A. Lorenz Shock absorber. W. A. Johnson Shoe-polishing foot-rest. R. Young
Oxygen from vessels, Removing	Show window or store front D. J. Murnane Side frame
Packing II, Bronsseau Packing, Metallic rod J. Badeker Packing or shipping box J. T. Ferres Pail Lolder, Milk R. J. Ruble	Sign, Advertising. E. N. Heard Signal W. J. O'Brien Snap band for molds. C. H. Green Snap hook, Double-ended. K. Carter
Paper-feeding device. F. Schilz Paper-feeding machine. T. C. Dexter Paper from walls, Apparatus for removing old. W. C. Roberts et al	Snow-melting device. C. B. Mann Soil stack fitting. W. Goebel Solids from liquids, Machine for collecting H. Parker
Paper-testing deviceH. E. Eddy Pen and pencil holderII. J. Huddle PenholderH. A. Wulff Phonautographic record and duplicating the	Sorting machine. J. W. Pease Spark plug. T. C. Luce Spark plug. E. C. Rauch Spark plug. W. II. McNutt
same	Spectacles. L. F. Adt Speed apparatus, Variable W. B. Allyn Speed-governing mechanism, Fluid J. C. W. Jorgensen
Piano, Electrical	Spike, ProngedW. T. M. Brady Spinning and twisting device, Yarn V. Belanger Splice attachmentD. Ambrose
Picture frameF. W. Williams Pipe-filling device, TobaccoA. Falk Pipe grappleC. Kass Pipe sections, Joint for connecting	Spring for flexible connections J. II. O'Brien Spring wheel M. W. Peck Sprinkler C. A. Borgeson
P. J. McCabe Pipe union J. T. Kelly Piston E. Talbot Piston-rod connection P. M. Van Bosch	Square and protractorG. Hennigar et al Square, Carpenter'sF. W. Royal Square, Carpenter'sD. W. Montagne
Planter, Corn	Stacker, Pneumatic. J. Hagen Stamp-canceling device. J. Unger Starting device. W. Johnston Steam trap. J. J. Harpain
Plug lifter	Steel ingots for rolling, Preparing manganese
Polishing machine	Steel strips, Apparatus for removing the hardness from certain portions of hardnesd
Pottery formerT. Lunn Power, Transmission rope J. P. Tolman et al PressK. S. Blanchard Printing apparatns, Curtain support for blueR. Herman	Steel, Treating manganeseW. S. Potter Steneiling machineS. T. Smith, Jr. StevilizerG. H. Reeves Stirrnp, SafetyD. Samson Stoker's hoeW. E. Sheehy
Printing machineH. L. Reckard Printing machine, Multicouple multirevolu- tionW. Scott Propeller for boats, Reversible	Striking mechanism. H. A. Sedgwick Stuffing box. W. Johnson Surgical instrument. G. E. Gwinu Swivel socket. J. E. Prosser
Propellers, Gearing forW. A. Hail	Talking machine horn and bracket therefor F. Kane Talking machine records, Duplicating T. A. Edison
Pulp screen, Centrifugal. C. W. Thomas Pump. C. M. Smith Pump. C. A. Kaiser Pump, Centrifugal. G. E. Hanes et al Pump, Multiple-feed gear. W. A. Frederick	Tantalum, Case-hardening. O. A. Simpson Teat cup. D. T. Sharples Teat cup. D. Klein et al Telephone disinfector. B. F. Gardner
Pump, Windmill A. Randolph Punch and bolt cutter. R. W. Weatherman Quartz mill J. W. Myer Rail bending and straightening device	Telephone system,, A. H. Dyson Telephone system, Automatic (2 pats.) A. H. Dyson Telephone system, Semi-automatic
Rail joint A. L. Casady Rail joint W. P. and S. G. Thomson Rails for the attachment of vail bonds,	Thill couplingJ. Hofstetter Tickets, checks, and the like, Device for holding and severingT. A. Rousscau
Device for preparingW. G. Stuart Railway pile dvivers, &c., Turn-table mech- anism forS. L. G. Knox Railway vailM. P. Marray	Tide motor
Itailway signal. F. L. Dodgson Railway signaling system J. A. Jones Railway system P. Ziron Railway tie G. C. Green	Time recorder, Employe'sA. Pestel TireB. B. Dawson Tire for road-vehicle wheels R. J. Caldwell
Railway tieE. L. Tschirch Railways, Catenary overhead system for electricW. A. McCallum Rake and hoe, CombinedA. A. Kohler Razor guard, SafetyM. Monetti	Tire, Sectional emergency
Receiving apparatusH. Shoemaker Receiving apparatus (2 pats.) F. W. Midgley	Tobacco pipe. R. Kronenberg Tobacco pipe. W. M. Keenan Tobacco pipe. F. J. Kieser Toilet-stick holder. A. L. Weissenthanner
ReflectorJ. C. Culligan Removable nailV. C. de Ybarrondo Resilient connection (Reissue) J. E. Webster	Tool M. L. Cochran Tool for closing receptacles. J. Nazel et al Toy J. H. Allen Toy J. Schramm Toy, Aerial Z. D. Underhill
Road machineM. M. Sickler Rod clamp, Self-lockingJ. Selvamm Roof climberT. A. Wilkerson Rotary motorC. De Lukacevies	Toy or game. D. Campbell Toy roundabout. J. L. Allabough Trace chain. B. F. Brock Traction wheel Walking S. M. Bower
Rubber boot and shoe vulcanizing apparatus	Tramway, PortableO. F. Heydenreich Trigger mechanismC. H. and F. L. Ross TrolleyJ. Tari
Sand wheel	Truck, CarS. M. Vauclain Tubes, Discharge head for collapsibleO. Gerdtzen Tunnel concrete timbering. T. H. Stanley
Sawing machine. J. H. Irwin School seat. W. B. Cogger Screw. P. L. Robertson Seal for boxes. S. Whitehall Seat cover, Sanitary. C. L. Dreher	Tunnel-ventilating apparatusT. H. Johnson Tunnels or sewers, Center support or mold for formingG. F. Dillig
Seat cover, SanitaryC. Deen SettingW. Pepperling Sewing machine tableT. Kundtz et al Sewing machine, Two-thread overedge	Turbine
G. Niedermayr Shaft attachment J. F. Davis Shaker E. K. Hood	Typewriting machineB. C. Stickney Typewriting machine (2 pats.).E. B. Hess Typewriting machineE. C. Trouslot Typewriting machineH. Glaeser
Sharpener, Tool	Typewriting machineJ. Felbel

·	
harpening gravers or other tools, Holder for	-
harpening gravers or other tools, Holder	
hears and scissorsF. Meissner	
hears for cutting ironJ. Bilesik	
heet-feeding machine D. Lockwood	
R. E. and A. Kemper	
ing pure	
helving	
hock absorber	
how window or store front	
ight feedL. M. Fuller	
ign. AdvertisingE. N. Heard	
nan band for moldsC. H. Green	
nap hook. Double-endedK. Carter	
now-melting deviceC. B. Mann	
olids from liquids. Machine for collecting	
H. Parker orting machine. J. W. Pease park plug. T. C. Luce park plug. E. C. Rauch	
orting machine	
park plugE. C. Rauch	
pectaclesL. F. Adt	
peed apparatus, VariableW. B. Allyn	
peed-governing mechanism, Fluid J. C. W. Jorgensen	
pike, ProngedW. T. M. Brady	
pinning and twisting device, Larn V. Belanger	
plice attachmentD. Ambrose	
pring for nexible connections	
pring wheel	
prinkler	
quare, Carpenter'sF. W. Royal	
quare, Carpenter'sD. W. Montague	
tamp-canceling deviceJ. Unger	
tarting device	
teel ingots for rolling, Preparing man-	
ganese	
ingots of manganeseW. S. Potter	
teel strips, Apparatus for removing the	
park plug. T. C. Luce park plug. E. C. Rauch park plug. W. H. McNutt pectacles. W. H. McNutt pectacles. L. F. Adt peed apparatus, Variable. W. B. Allyn peed-governing mechanism, Fluid J. C. W. Jorgensen pike. Pronged. W. T. M. Brady pinning and twisting device, Yarn V. Belanger plice attachment. D. Ambrose pring for flexible connections J. H. O'Brien pring wheel M. W. Peck prinkler. C. A. Borgeson quare and protractor. G. Hennigar et al quare, Carpenter's. F. W. Itoyal quare, Carpenter's. D. W. Montagne tacker. Pneumatic. J. Hagen tamp-canceling device. J. Unger tarting device. J. Unger teel ingots for rolling, Preparing man- teel ingots of manganese. W. S. Potter dicel strips, Apparatus for removing the hardness from certain portions of hard- ened. H. F. M. Hinntsman iteel structure. W. S. Potter dicel structure. W. S. Potter	
teel structure	
theel structure W. A. Dunn theel, Treating manganese W. S. Potter stenciling machine S. T. Smith, Jr. sterilizer G. H. Reeves	
tevilizer	
titrrup, Safety. D. Samson toker's hoe. W. E. Sheehy triking mechanism. H. A. Sedgwick tuffing box. W. Johnson surgical instrument. G. E. Gwinu twivel socket. J. E. Prosser Calking machine horn and bracket therefor	
triking mechanismH. A. Sedgwick	
tuffing box	
wivel socketJ. E. Prosser	
Calking machine horn and bracket therefor	
F. Kane Calking machine records, Duplicating	
Cantalum Case-hardening O. A. Simpson	
'eat cupD. T. Sharples	
Colombono disinfector B. E. Gardner	
Telephone systemA. H. Dyson	
Telephone system, Automatic (2 pats.)	
Celephone system, Scmi-antomatic	
C. R. Austin	
Cickets, checks, and the like, Device for	
holding and severingT. A. Rousseau	
File-making machineG. M. Myers	
Fime and wage computing and recording	
Fime recorder, Employe'sA. Pestel	
Fire	
F. Kane Calking machine records, Duplicating T. A. Edison Cantalum, Case-hardening. O. A. Simpson Ceat cup	
Fire, Sectional emergency Pudeshain et al	
Fire, VehicleS. A. Douglas	
fires, Removable wheel rim for pneumatic	
Fobacco pipe	
Tobacco pipeF. J. Kieser	
Fool	
Tool for closing receptacles. J. Nazel et al	
royJ. Schramm	
Foy, AerialZ. D. Underhill	
Foy roundaboutJ. L. Allabough	
Trace chainB. F. Brock	
Tranway, Portable F. Heydenreich	
Trigger mechanismC. H. and F. L. Ross	
Trolley catcherJ. R. Ricketts	
Trnck, CarS. M. Vauclain	
Tudes, Disenarge head for collapsible O. Gerdtzen	
Tunnel concrete timbering. T. H. Stanley	
Tunnel-ventuating apparatusT. H. Johnson	
Tunnels or sewers, Center support or mold	
Foy. J. H. Allen Foy. J. Schramm Foy. Aerial Z. D. Underhill Foy or game. D. Campbell Foy roundabout. J. L. Allahough Frace chain. B. F. Brock Fraction wheel, Walking. S. M. Bower Framway, Portable. O. F. Heydenreich Frigger mechanism. C. H. and F. L. Ross Frolley. J. Tari Frolley catcher. J. R. Ricketts Frnick, Car. S. M. Vauclain Tubes, Discharge head for collapsible. O. Gerdtzen Tunnel concrete timbering. T. H. Stanley Funnel-ventilating apparatus. T. H. Johnson Tunnels or sewers, Center support or mold for forming. G. F. Dillig Turbine. P. Emden et a Type base, Rubber. H. S. Folger Typesetting machine. E. A. Adcock	
Type base, Rubber	
Typesetting machine. E. A. Adcock Typewriting machine. A. W. Smith Typewriting machine. B. C. Stickney	
Typewriting machineB. C. Stickney	
Typewriting machine (2 pats.). E. B. Hess Typewriting machine E. C. Trouslot	

St., IV. W., Washington, D. C.
Typewriting machineW. J. Roehe Typewriting machineA. W. Steiger
Typewriting machine
Typewriting machineW. E. Barnard
Typewriting machine
Umbrella, FoldingJ. W. Olsson Umbrella, FoldingA. R. Colgrove UndergarmentH. Goolsby
Vacuum cleaner. J. A. Forney Valve, Automatic
Valve, Automatic safety check. J. C. O'Neill et al Valve, Cheek. H. Hitchcoek Valve, Chroff. E. C. Marrs Valve Fluid-pressure. J. Fournia Valve for blowers. G. C. Hicks, Jr. Valve for internal-combustion engines
Valve for blowersG. C. Hicks. Jr. Valve for internal-combustion engines, ExhaustT. J. Koven
Valve for water nozzles. F. Gieller Valve gear for explosion engines
otherA, P. Kjoller Vehicle wheelG. E. Woodbury Vending machine (2 pats.). J. W. Patterson
L. G. Merritt et al Ventilator
Vestibule diaphragms, Means for attaching I. H. Donaldson
Vise, Strap pipeW. I. Trethewey Vitreous matter, Composition of C. A. Kraus
Vestibule diaphragms, Means for attaching Vestibule diaphragms, Means for attaching J. H. Donaldson Vise, Strap pipe
titude in the same of the same
Water-closet valveE. G. Watrous
tile materials, Benzin apparatus for. U. Rothlisberger Waste-plng controlling device. W. H. Schulte Water-closet valve. E. G. Watrous Water heater (Reissue). W. P. Cosper Water-meter alarm. A. Rioux Watering tank, Stock. E. H. Gedge Wave motor. F. H. Farmer Wave motor. W. K. Bowerman Weather strip. J. Dumont
Wave motorW. K. Bowerman Weather stripJ. Dumont Weighing and bagging machine
Wave motor. W. K. Bowerman Weather strip. J. Dumont Weighing and bagging machine. G. T. Wade Weighing machine. H. Riehardson Well screen. H. R. Decker Well screen. H. R. Decker et al Wells, Drilling and cementing. W. W. Pedder Wheel. W. L. Jacoby et al Wheel rim, Vehiele. S. A. Huntley Wheelbarrow. P. E. Newcomb Wind motor. J. Schies Winding device. J. Jacobson
Well screen
Wheel rim, VehieleS. A. Huntley WheelbarrowP. E. Newcomb Wind motorJ. Schies
Winding deviceJ. Jacobson WindowW. A. Farmer Window or screen hanger, Storm
Window provision box C. C. Bishop Window screen L. Manelius
Windows, Ventilating stop and lock for R. B. Hoermann Wire spring, Folding woven, H. N. Werner
Wind motor. J. Sehles Winding device J. Jacobson Window W. A. Farmer Window or screen hanger, Storm. G. W. Darlington Window provision box. C. C. Bishop Window screen. L. Manelius Window screen. J. S. Speer Windows, Ventilating stop and lock for. R. P. Hoermann Wire spring, Folding woven H. N. Werner Wire stretcher. J. E. Johnson et al Wire stretcher. W. R. Buchanan Wood, Preserving. G. Hartmann et al Wooden core and making the same.
Wood, Freserving. G. Hartmain et al. Wooden core and making the same D. C. Meehan Wrench. M. C. Bersted Wrench. J. N. Shaw Yoke, Hog. W. R. McCarroll Zinc ores by the precipitation process, Treatment of A. Desgraz
DESIGNS. Automobiles, License panel bracket arm for
Badge A. Schickerling
Clocks, Handle for alarmC. P. Catlin Doll
Heater casingG. H. Minier et al

Automobiles, License panel bracket arm for
T. Harper
Badge A. Schickerling
Brushes or similar articles, Back of
G. L. Turner
Clocks, Handle for alarmC. P. Catlin
Doll
Font, DispensingJ. M. Travis
Heater casingG. H. Minier et al
Light shade
Medal or similar articleH. W. Shepard
Picture mountE. A. Evans
Plate or similar articleJ. J. Miller
Pnenmatic-cleaning-machine casing
A. J. Stecker
Post for furniture or similar articles
PPilon
Spoons, forks, or similar articles, Handle
forB. P. Jenks

Issued November 15, 1910.

MECHANICAL PATENTS.

Acid, Formic	H. Howard
Acoustic diaphragm.	
Adjustable wrench	W. S. Miehle
Advertising apparatu	s, Prize-awarding
	R. F. Hndson
Advertising device	N. Joleen
Aerial projecting app	aratusI. Hourwich
Aeroplane	J. W. Dunn
Air compressor, Frie	ctionalC. A. Jaque

Air motor or wind mill Air-purifying apparatus Alkaline battery Alkaline battery containing mercury. Amalgamator Anusement device Analyse for gay wires for	O. E. Sill .J. H. Kinealy
Alkaline battery containing	chromium and
Amalgamator	.J. H. McNeil
Amusement device Auchor for guy wires, &c E. H. Angle bisector Animal trap E. Anthraquiuone derivatives same F. Antiseptic and perfumed block Apple cutter and corerB. Antoharp aud like instrument	I. Lichtenberg
Angle bisector	M. Alderman
Anthraquiuone derivatives same	and making E. Hepp et al.
Antiseptic and perfumed bloc	ek L. Eilertsen
Apple cutter and corerB. Antoharp and like instrume	Fullmer et al.
Automatic-discharge lubricate	or
Automobile pneumatie system	.W. E. Sidney
Antomobile radiator	R. S. Wallace I. Klein et al.
Antoharp and like instrume We Automatic-discharge lubricate Automobile pneumatic system Antomobile radiator	J. Love
Rail cars on sheet-metal rass	E. Armstrong
Pail for lanterns &-e	S. Svenson
Bait, Artificial	E. L. Cox
Bath-tub and layatory fixtu	. P. Spitsnagle
Bearing, Ball	E. G. Watrous
Bedsteads and the like, Atta	ichment for J. Taylor
Beef jackA. B Beehive attachment	. Terril et al.
Belly-rolling machine Belt, Conveyer	W. M. Metzler
Belt for traction elevators, ?	C. O. Pearson
Bicycle seat, Child's	W. H. Martin
Blind Stop	H. K. Wheeler
Pody brace	.L. Onderdonk
Blindstitch machines, Press Body brace Boiler (2 pats.)	Sellers et al.
Boilers, Flame or baffle brid	lge for water-
Book mark	L. Aray
Box fastener (3 pats.)	.P. R. Warren W. Beehler
Brake	nd C. A. Kunz .M. E. Troutt
Brake attachment, Auxiliary	coaster H. K. Jones
Brake attachment, Auxiliary Brakes, Means for automati proportionally to the load, application of friction. If Brick-handling machine. Brick machine, End-cut. Bridle bit. J. Broom brace. Brush. S Brush for power marking ma Brush holder. W Buckle. Buckle, Tug. Building construction. Burglar alarm. Burner. Buruer. W. Burnishing machine. Bntton. Buttoning device. Cabinet, Film. Cabinet, Film. Cabinet-finishing tool. Cabinet, Stamp holding and cabinet,	ically varying, the pneumatic
application of friction	R. C. Penfield
Bridle bitJ.	A. Fairbauks
Brush for power marking me	. B. McHenry
Brush holder	W. W. McCoy
BuckleBuckle. Tug	W. D. Flynn T. A. McKee
Building construction Burglar aların	.H. I. Jeffers .F. L. Holmes
BurnerW.	J. E. Flitcroft J. Hackmann
Burnishing machine	J. J. Murdoch N. Tweet
Cabinet, Automatic weighing	.J. G. Robison
Cabinet, Film	G. J. Gilmore
Cabinet, Stamp holding and of	lelivering
Cachou holderA.	M. Ernsberger
Calculating machines	O'Brien et al.
Calendar rollV	V. S. Grauger G. T. Watkins
CameraJ. Camera-shntter-operating att	A. Robertson achment
(2 pats.) Camera shutter, Photographi	J. Becker
Can-body-making machine. E	Schmid et al. V. Swangren
Cans, Aerating cover for mi	II. A. Mather lk. S. Shapiro
Canteen Compartment W	C. Lee
Car and vehicle, DumpP	J. Harrigan
Car brake, Railway	L. de Vito
Car couplings, Chain-hole cap	Gallagher, Jr.
Car door	.A. J. Bazeley H. A. Christy
Car dumping door, Railway.	W. Summers
Car, FreightJ.	J. M. Coleman
ing freightJ.	A. Campbell
Carbureter	.J. H. Koontz
Carriage feed cylinder moun	tingC. P. MFor
Cash and autographic regist	er
Cash register	R. Treber F. Hanneman
Chain, MakingC.	W. Levalley L. Bruckmann
Camera shutter, Photographi F. C. Camera shutter, Photographi F. C. Can-body-making machiue. E Can lock, Milk. Cans, Aerating cover for mi Cans and like receptacles, Cl Canteen. Compartment. W Car and vehicle, Dump. P Car brake. Car brake, Railway. Car buffing mechanism, Pass Car buffing mechanism, Pass Car door. Car door. Car dumping door, Railway. E. Car fender. J. Car, Freight. Cars, &c., from entry, Mean ing freight. J Carbureter Carriage curtain fastener. Carriage feed cylinder moun Cash and autographic regist Cash register. Cement mold. R. Chain. C. Chain, Making. I Chair seat. C. Chair table attachment. Change maker and indicator.	Munsou et al. A. G. Eyles
спапас шакег ани инпессот.	· L. Alemnans

Check-controlled apparatus W. F. Ablett Chimney cowl . E. C. Powers Chlorates, Purifying . R. Gartenmeister Chuck, Grinding . G. W. Fry Circuit breaker . F. W. Harris Circuit-discounceting switch, High-potential . S. Q. Hayes Clamping device . W. Clore Clamping device . W. Clore Clamping device . W. J. Cannady Clevis . N. A. Niemie Clock . J. D. Law Clock regulator . W. E. Porter Clothes drier . G. Scroggie Clothes line . W. J. Walsh Clothes wringer . A. N. Keil Clutch and brake, Combined . D. Miolans Clutch, Friction . H. J. Smith Clutch, Friction . H. W. Jacobs et al. Clutch, Friction . B. D. Northrup Coaster brake . W. A. Bartels Coaster brake . W. A. Bartels	
Chlorates, PurifyingR. Gartenmeister Chuck, GrindingG. W. Fry	j
Circuit breakerF. W. Harris Circuit-discounceting switch, High-potential	
Clamping device. S. Q. Hayes Clamping device. W. I Convert	
Clamping device	1
Clock regulatorW. E. Porter Clothes drierG. Scroggie	j
Clothes line]
Clutch and brake, Combined D. Miolans	
Clutch, FrictionH. W. Jacobs et al. Clutch, FrictiouC. J. Fensom	j
Clutch, FrictionB. D. Northrup Coaster brakeW. A. Bartels	
Clutch, Friction. B. D. Northrup Coaster brake. W. A. Bartels Coat and trousers hauger, Combinatiou. J. E. Carroll Cock and needle valve, Combined. L. E. Shaw Cock, Signal. C. W. Sherburne Cock, Vavle. J. A. Lemetais Coffee and tea pot. W. V. Letherbury Coin assorting aud counting machine. P. E. Rees Collar, &c., supporter. W. H. Wilson Collar for draft animals. C. Young Collar supporter. H. N. Northrop Composing machines, Matrix-delivery mechanism for monoline. W. E. Bertram Computing machine (2 pats.) F. F. Main Coucrete pile or column, Reinforced. R. A. Cummings Concrete structures, Apparatus for casting H. French]
Cock, SignalC. W. Sherburne]
Cock, VavleJ. A. Lemetais Coffee and tea potW. V. Letherbury]
Collar &c. supporter W. H. Wilson	j
Collar for draft animalsC. Young Collar supporterH. N. Northrop]
Composing machines, Matrix-delivery mechanism for monolineW. E. Bertram]
Computing machine (2 pats.)F. F. Main Coucrete pile or column, Reinforced]
Concrete structures, Apparatus for casting H. French	1
CondenserD. G. Galbraith Couduit hoodL. A. Fleury, Jr.]
Conveyer mechanismJ. K. Russell Conveyer mechanismJ. Mussell Conveyers Deflector for gravity]
Concrete structures, Apparatus for casting H. French Condenser)
Cooking utensil]
green,, S. E. and W. W. Morral Corset, Appavel (2 pats.)D. Kops Couch or bed, Extension, W. W. Taylor	1
CountersinkJ. E. Freyman Covers, Means for removingD. R. Levin	(
CrateE. L. Walker Crucible-holding deviceE. P. Carr	(
Cultivator	(
Curtain and shade fixtnreE. Page et al. Curtain poleC. Hunt	(
Cuspidor	(
Cntter bit-changing means, Rotary	(
Cutter bit-changing means, Rotary Cutting irregular forms, Machine for Cycle saddles, Mounting for motor S. Busch	(
Cycle saddles, Mounting for motor	(
Derrick, Adjustable	è
Display case, CardH. A. Shannon Ditchiug machineF. B. Winkelman	(
Diving apparatus	0
Door guide bracket, Sliding. J. Gauthier Door lockF. Assmann	Ò
Door locking mechanism, Emergency A. J. Prevost	(
Door opening and closing device	(
Door-operating mechanism. P. J. Harrigan Doors, windows, &c., Fastening device for	(
Dough portions into loaves, Machine for	(
Oraft gear, RadialE. H. Schmidt Orafn trap, FloorW. Weiler	() ()
Drawing-board attachmeutJ. W. Wells Dredging, Poutoon pipe for marine	I
Drying reel for clothes, &c	H
Drawing-board attachmeutJ. W. Wells Dredging, Poutoon pipe for marine	Ī
Orilling machine, MultipleO. A. Smith Electric arcs, Production of long stable	I
Electric cable jointW. O. Wilson Electric circuit interrupter R. P. Jackson	I
Electric-circuit-protection system	I
Electric circuit switch (2 pats.)	I
charge (2 pats.)	I
Electric iron and stove, Combined B. R. Charles	Ŧ
Electric machine, MagnetoS. B. Daugherty et al.	I
dynamo (3 pats.)	E
dynamo	E
Electrical apparatus, Device for testing	F
Electric circuit interrupter R. P. Jackson Electric circuit interrupter R. P. Jackson Electric circuit switch (2 pats.) F. W. Harris Electric furnace with magnetically-rotated charge (2 pats.) Electric heater L. F. Parkhurst et al. Electric iron and stove, Combined Electric machine. Magneto S. B. Daugherty et al. Electric machines. Armature winding for dynamo (3 pats.) N. W. Storer Electric machines, Field-winding coil for dynamo Electric machines, Field-winding coil for dynamo Electric plug and socket L. W. Kutsch Electrical apparatus, Device for testing. Electrical circuits, Multiple fusible cutout for A. E. Partingtou Electrical conduit attachment Electrical for recorsible galvania betterical	F
meetiode for reversible garrante matteries	I
	I
Elevators, Alternating-current controlling apparatus for hydraulicD. L. Lindquist Engine priming device, Explosive	Ι
Engiue-starting apparatus, Gas	I
	- 1

Engines, Ignition means for internal-com-	-
bustion	1
Envelop, ExpansionR. W. Pittman	1
Excavator bucketO. J. Martinson	ł
Expanding or adjustable press for fertiliz- ing material &c W E Overton et al.	-
ExplosiveF. H. Briggs	5
Explosive engine	7
Fabric-chain machineJ. F. Gail	i
Engines, Ignition means for internal-combustion. M. B. Crist Envelop W. A. McCloy Envelop W. A. McCloy Envelop, Expansion R. W. Pittman Excavator bucket O. J. Martinson Expanding or adjustable press for fertilizing material, &c W. E. Overton et al. Explosive F. H. Briggs Explosive engine G. L. Fogler Extension table, Pedestal C. J. Brown Fabric-chain machine J. F. Gail Fan, Spring-motor-driven table D. M. Pfautz Faucets, Hose connection for B. D. Knickerbocker Fence S. Hohulin	
Faucets, Hose connection for	•
B. D. Knickerbocker	
Fence	l
Filtration systemS. Ouimet	
Fire engine	;
Firearm	
Firearm, AutomaticC. P. Clement	
Fence. S. Hohulin Filter system. S. Hohulin Filter system. F. Turek Filtration system. S. Ouimet Fire engine. II M. Minnis Fire kindler. S. Ishii Firearm. A. I. Risser Firearm, Automatic. C. P. Clement Fireproof buildings, Partition construction for. H. Hill	
F. Becker et al.	
Fish hook, Shell,J. F. Boepple	
Fishing reelP. F. Wadham	
Floor finishing and polishing machine	
W. O. Canfield	ı
Floor set	
Flue receiver. Adjustable. J. J. McDonald	
Fluid-pressure applianceT. S. Scott	
Fish-catching device, Automatic. F. Becker et al. Fish hook. Fish hook, Shell. Fish hook, Shell. Fishing reel. Fishing reel. F. F. Wadham Fishing reel. W. F. Stockford Floor finishing aud polishing machine. W. O. Canfield W. Gaethje Flower staud. Flower staud. Flue receiver. Adjustable. J. J. McDonald Fluid-pressure appliance. Fly killer For horn. J. Kleinberger et al. Form, Skirt. H. D. Shaiffer	
Form, Skirt	
rruit cleaner and graderI. W. Peck Furnace E. Katzinger	
Furnace (Reissue)	
Furnace cover Crucible T T P Promise	
Furnace doorJ. Robinson	ĺ
Fog hørn. J. Kleinberger et al. Form, Skirt. H. D. Shaiffer Fruit cleaner and grader I. W. Peck Furnace. E. Katzinger Furnace (Reissue). H. A. Poppenhauseu et al. Furnace cover, Crucible. J. L. R. Brown Furnace door. J. Robinson Furnace for the production of cast iron and steel. F. Resinelli	
Furnace head for gas furnaces with chaug-	
ing directiou of flames. B. Versen Furnace structure. J. Eggins Fuse clipper and splitter, Miner's combined Gage glass. F. R. Bispham Galvanic battery, Reversible. W. Morrison Garment banger. G. V. Nichols Garment rack. J. C. Sassenberg Garment supporter. F. M. Lingo et al. Gas burner, Blast-furuace-stove. A. G. McKee Gas engine. J. B. Brown Gas generator. W. A. Wallace Gas generator, Acetylene. V. E. Peterson	
Furnace structureJ. Eggins Fuse clipper and splitter. Miner's combined	
S. H. Lunsford	Ĺ
Gage glass	
Garment bangerG. V. Nichols	5
Garment rackJ. C. Sassenberg	,
Gas burner, Blast-furuace-stove	
Gag ongine	,
Gas generator	à
Gas generator, AcetyleneV. E. Peterson	
Gas mixer regulating deviceP. Lulli Gas-producing apparatusF. H. Treat	
GateH. V. Doty et al.	
Gear, Gapped (2 pats.)W. T. Sears	
Gear wheel	
Gearing A. Panyard	
Geariug, Controlling mechanism for change-	
Geariug, Controlling mechanism for change- speed and reversingA. P. Brush Gaaring, Variable-speed	
Geariug, Controlling mechanism for change- speed and reversingA. P. Brush Gearing, Variable-speedR. Lindsay Glass-blowing machine (2 pats.)	
Gearing, Controlling mechanism for change- speed and reversingA. P. Brush Gearing, Variable-speedR. Lindsay Glass-blowing machine (2 pats.) W. D. Fredrick Glass cleaner I. G. Hatosy Jr.	
Gearing, Controlling mechanism for change- speed and reversing. A. P. Brush Gearing, Variable-speed. R. Lindsay Glass-blowing machine (2 pats.). W. D. Fredrick Glass cleaner. L. G. Hatosy, Jr. Glass-making apparatus. Sbeet	
Geariug, Controlling mechanism for change- speed and reversing. A. P. Brush Gearing, Variable-speed. R. Lindsay Glass-blowing machine (2 pats.) V. D. Fredrick Glass cleaner L. G. Hatosy, Jr. Glass-making apparatus, Sbeet. F. M. Francart et al. Glassware mold G. W. Fry	
Geariug, Controlling mechanism for change- speed and reversing. A. P. Brush Gearing, Variable-speed. R. Lindsay Glass-blowing machine (2 pats.)	
Gearing, Controlling mechanism for change- speed and reversing. A. P. Brush Gearing, Variable-speed	
Gearing, Controlling mechanism for change- speed and reversing. A. P. Brush Gearing, Variable-speed. R. Lindsay Glass-blowing machine (2 pats.) W. D. Fredrick Glass cleaner. L. G. Hatosy, Jr. Glass-making apparatus, Sbeet. Glass-making apparatus, Sbeet. Glassware mold. G. W. Fry Gouge. J. A. Suckley Grain separator cleaning attachment. F. Prinz	
Gas generator	
Grate. Hollow water-heating. L. Kaufman Grinding machine	
Grate. Hollow water-heating. L. Kaufman Grinding machine	
Grate. Hollow water-heating. L. Kaufman Grinding machine	
Grate. Hollow water-heating. L. Kaufman Grinding machine	
Grate. Hollow water-heating. L. Kaufman Grinding machine	
Grate. Hollow water-heating. L. Kaufman Grinding machine	
Grate. Hollow water-heating. L. Kaufman Grinding machine	
Grate. Hollow water-heating. L. Kaufman Grinding machine	
Grate. Hollow water-heating. L. Kaufman Grinding machine	
Grate, Healing water-heating, L. Kaufman Grinding machine	
Grate, Healing water-heating, L. Kaufman Grinding machine	
Grate, Healing water-heating, L. Kaufman Grinding machine	
Grate, Hollow water-heating, L. Kaufman Grinding machine	
Grate, Hollow water-heating, L. Kaufman Grinding machine	
Grate, Hollow water-heating, L. Kaufman Grinding machine	
Grate, Hollow water-heating, L. Kaufman Grinding machine	
Grate, Hollow water-heating, L. Kaufman Grinding machine	
Grate, Hollow water-heating, L. Kaufman Grinding machine	
Grate, Hollow water-heating, L. Kaufman Grinding machine	
Grate, Hollow water-heating, L. Kaufman Grinding machine	
Grate, Hollow water-heating, L. Kaufman Grinding machine	
Grate, Hollow water-heating, L. Kaufman Grinding machine	
Grate, Hollow water-heating, L. Kaufman Grinding machine	
Grate, Hollow water-heating, L. Kaufman Grinding machine	
Grate, Hollow water-heating, L. Kaufman Grinding machine	
Grate, Hollow water-heating, L. Kaufman Grinding machine	
Grate, Hollow water-heating, L. Kaufman Grinding machine	
Grate, Hollow water-heating, L. Kaufman Grinding machine	
Grate, Hollow water-heating, L. Kaufman Grinding machine	
Grate, Hollow water-heating, L. Kaufman Grinding machine	
Grate, Hollow water-heating, L. Kaufman Grinding machine	
Grate, Hollow water-heating, L. Kaufman Grinding machine	

Engines, Ignition means for internal-com-	Internal combustion engineT. Veitel
bustion. M. B. Crist Envelop. W. A. McCloy	Internal-combustion engine and operating the sameh. G. Sabathe
Envelop, ExpansionR. W. Pittman Excavator bucketO. J. Martinson	Internal-combustion engine, Rotary multi- ple-cylinderJ. A. Waltman
Expanding or adjustable press for fertilizing material, &cW. E. Overton et al.	from from its ores, Exracing
Explosive	Jar or recentable R. H. Wola
Extension table, Pedestal. C. J. Brown Fabric-chain machine. J. F. Gail	Jeweler's and dentist's burner
Fan, Spring-motor-driven table	Journal wheel
Faucets, Hose connection for	Kerosene burnerE. F. Gennert Kuife, fork, and spoon holder. R. C. Gny
FenceB. D. Knickerbocker S. Hohulin	Knives, Machine for milling splicing
Filter system	Knitting-machine needleR. W. Scott Ladder, Folding scaffoldH. F. Hartman
Fire engine	Lamp
FirearmA. I. Risser	Lamp, Arc. T. L. Carbone Lamp-burner W. H. Burnett
Firearm, AutomaticC. P. Clement Fireproof buildings, Partition construction	Lamp cutout and shunt switch, Electric
for	Lamp, Incandescent gasE. Mineer
F. Becker et al. Fish hookJ. Y. Payton	Lamps, Making mantles for incandescent gasO. Kaufman
Fish hook, Shell. J. F. Boepple Fishing reel. P. F. Wadham	Last
Fishing reel	Laundry apparatusR. C. Merritt Lavatory axtureE. G. Watrous
Floor finishing and polishing machine	Lead. Apparatus for manufacturing sub-
Floor set	limed whiteL. S. Hughes Lead, Manufacturing sublimed white
Flue receiver. Adjustable. J. J. McDonald Fluid-pressure applianceT. S. Scott	Leaf-supportL. S. Hughes Leaf-supportT. Hauseu
Fly killerC. H. Porter Fog hornJ. Kleinberger et al.	Leather-skiving-machine pressure device C. II. Bayley et al.
Form, Skirt	Leather-working machineG. McKeer Leg, ArtificialH. T. Odgers
FurnaceE. Katzinger	Level
Furnace (Reissue)H. A. Poppenhauseu et al.	Lifting jackT. H. Lovejoy Lighting fixtureG. D. Beiner
Furnace cover, CrucibleJ. L. R. Brown Furnace doorJ. Robinson	Lighting system, Hydrocarbon
Furnace for the production of cast iron and	Limb, ArtificialT. M. Lawrence Line-casting machine (2 pats.)
Furnace head for gas furnaces with chauging direction of flamesB. Versen	Line-casting machine (2 pats.)
Furnace structureJ. Eggins Fuse clipper and splitter, Miner's combined	Litharge from metallic lead mixed with it,
S. H. Lunsford	FreeingL. S. Hughes Loader and stackerR. B. Fultou Loading apparatusJ. E. Woods et al.
Gage glassF. R. Bispham Galvanic battery, ReversibleW. Morrison	Lock
Garment bangerG. V. Nichols Garment rackJ. C. Sassenberg	Lock-actuating mechanism, TimeE. M. Benham
Garment supporter, F. M. Lingo et al. Gas burner, Blast-furuace-stove	Lock box
A. G. McKee Gas engine. J. B. Brown	Locking means, ClosureC. J. Ljunggren Locking mechanismA. J. Prevost
Gas generator	Locomotive and other vehicle fender
Gas generator, AcetyleneV. E. Peterson Gas mixer regulating deviceP. Lulli	Locomotive, ArticulatedS. M. Vauclain
Gas-producing apparatusF. H. Treat GateH. V. Doty et al.	Locomotive attachmentW. A. Jones et al. Locomotive, ElectricG. M. Eaton
Gate B. J. Campbell Gear, Gapped (2 pats.) W. T. Sears	Loom bobbinJ. P. Chatel Loom picker mechanismD. Thibeault
Gear wheelR. C. Bloomfield GearingT. A. Panyard	LubricatorF. C. vou Haxthausen Machinery, Bed-plate forF. Gerb
Gearing, Controlling mechanism for change-	Magneto interrupter. W. E. Dow Mail-bag catcher. W. A. Carpenter
speed and reversingA. P. Brush Gearing, Variable-speedR. Lindsay	Mail receiving and collecting device
Glass-blowing machine (2 pats.)	Manhole formP. G. Harshbarger
Glass cleanerL. G. Hatosy, Jr. Glass-making apparatus. Sbeet	Massage apparatus, Vibratory (2 pats.) F. R. Kunkel
Glassware moldG. W. Fry	Wassaging abnaratusE. J. McCarthy
GougeJ. A. Suckley Grain separatorF. Ayler	Match box
Grain-separator cleaning attachment F. Prinz	Measurer, Dry J. J. Marshall Measuring device C. J. Gillette
Grate. HeatingE. R. Cahoone	Mechanical movementW. A. Whitney Mechanical movementC. R. Uebelmesser
Grate. Hollow water-heatingL. Kaufman Grinding machineA. Lilljiquist	Melting furuace, Oil-heatedA. T. Brown
Grinding-machine attachment, Flat-surface	Metal corner
Grinding millK. O. S. Thors Grinding mill, Rolling-ballsL. Hoffman	Metals, Means for applying fluid
Gripping mechanismC. A. Morris Gun. TrapC. D. Lovelace	Metallic leaf in rolls, Machine for packag-
Gyroscope and sphereJ. F. O'Byrne Hair pinL. C. Belz	ing
Hammer drill. W. Prellwitz Hammer drill. A. H. Taylor	Meter boxJ. W. Butts Mill-floor construction, Reinforced wooden
Hand rakeO. Kampfe	C A M Prarar
Hand shieldL. B. Tebeau Harvester, BeetM. H. Wadhams	Mills, Grinding plate for attrition S. L. Fraser et al Mining machineF. L. Sessions
Harvester, CornB. E. Reed Harvester, Cotton (2 pats.)G. Lispenard	Miter boxF. Peterson
Harvester, CottonD. D. Miles HatS. Newman Hat-pin guardW. N. Hutchison et al.	Mixing machineC. T. Foote Moistener, FingerH. S. Cates
Hat-pin guardW. N. Hutchison et al. Hat protectorL. F. Wolfe	Molded mass, ProducingA. Hof et al. Molding machineH. E. Pridmore
Hatch fastener A. Hyud Hay carrier I. W. Davis et al.	Motive fluid, Apparatus for generating G. B. Hayes
Head euvelopR. A. Bower Heaters, Condensate-collector for water	Motor-control system. F. B. Rae Mower, Lawn A. Hill
E. Ruud	MutographF. C. Newell
Heating by means of radio-incandescent bodies, System of	Needling machine D. S. Brown Nut lock N. Little
Heating system, Indirect waterE. Ruud Heel plateE. W. Gray	Nut lockR. CooperNut lockI. L. Miller
Heel, ShoeJ. Colbert Hides or skius, Unhairing and tanning	Nut lock and tightening device
Hinge and receptable, Combined	Nut-locking deviceE. L. J. Schaffelke
	Nut-locking toolR. A. Clark Offset-preventing device. H. A. W. Wood
HoopJ. Dupree Horseshoe anti-skidding attachment	Oil burner. W. A. Stephens
J. J. May	Oil burner, Crude
Horseshoe spreaderC. Vestergaard Hose bridgeM. E. Trontt	Oils, fats, &c., Emulsifyiug
Hydraulic chairE. Melchior Hydraulic pressF. Phelps	Optical projection apparatus
Hydrocarbon vaporizer and burner	Orchard heater
C. Mendell Ice-making apparatusW. H. A. Halsall Impaling rollE. L. Chaddock	Orchard heaterJ. L. Hamilton Ore classifierA. D. J. Malchus
Index tab	Oven, Baker'sW. F. Petersen Overshoe fastenerR. E. White
	Packing case
Ingot mold	Packing, PistonH. S. Studdert Paint package, Semi-solidL. Reusche
internal-compustion engineC. R. Radcliffe	Pan scraper

Panar faading maahinas Shoot ragistaring	
mechanism forT. C. Dexter Pasting and trimming machineW. J. Williams Pen and pencil holderX. F. Schnapka Pen for swine, FarrowingR. D. Spelts	
Pen and pencil holderX. F. Schnapka Pen for swine, FarrowingR. D. Spelts Permutation lock H. C. Lowric	
Permutation lock	1
films of moving	
PileL. E. Welsh Pile and means for driving the same L. E. Welsh	
Pipe attachment	
Plate shaving, trimming and tail-cutting machine, CombinedS. G. Goss	
Plow W. F. Lindsey Plow S. J. Minyard	
Plow. I. L. Fake Plow-point. M. F. McElyeen	
Placer separator D. J. Forbes Planter, Corn. F. W. Booth Plate shaving, trimming and tail-cutting machine, Combined. S. G. Goss Plow. W. F. Lindsey Plow. S. J. Minyard Plow. C. L. Hall Plow. C. L. Hall Plow. I. L. Fake Plow-point. M. F. McElveen Plow scraper, Disk. J. J. Shackelford Plows, Draft appliance for G. A. Anderson Plunger-elevator system. T. Larsson Pneumatic cleaner and force cup, Combined L. O. Howell	
Pneumatic cleaner and force cup, Combined L. O. Howell Pneumatic-despatch apparatusT. Bemis	
Phenmatic-despatch apparatus Phenmatic-despatch-tube apparatus C. F. Stoddard Polychrome screen and making same	;
	1
Portable elevator. A. Zikuumd Postal-money-order packet. J. S. Utley Poultry fount. G. W. Duncan Poultry house. W. G. Stout Pouring device. II. Desmolieres	1
Poultry house W. G. Stout Pouring device	1
Powder, Size. F. Beckmann Power mechanism J, F. Bard Power-transmitting apparatus, Hydraulic. C. R. Radeliffe	1
Power-transmitting mechanism, Variable-	4
Power-transmitting mechanism, Variable-speed. J. G. Jones Precious metalliferous ores, Treatment of (3 pats.). J. C. Clancy Printing press. H. J. Smith	6
Frinting press	3
R. J. Greenway Propeller G. B. Martin	3
Pulley, Yieldable	
Pump baseJ. J. Divekey Pump, condenser, and compressor, Centrifu-	24 34 3
Printing press ink fountain	4 34 34
Pump, Propeller turbineE. K. Wood Pump, Submerged double-actingA. P. Morris Pumping apparatus, Centrifugal	5
Pumping apparatus, Centrifugal	34 34
Punching apparatus, Centritugal. D. W. Jones et al. Punching and delivering tickets, Apparatus for. W. Clifford Purse or bill folder. L. B. Weissbrod Rail chair. F. Knobel et al. Rail claup, Guard. M. Burpee	32
Rail chairF. Knobel et al. Rail clamp, GuardM. Buvpee Rail fustener, MetallicL. Leaf	7
Rail fastener, Metallic L. Leaf Rail joint A. D. Schaeffer Rail joint and nut lock, Combination	7
Railway-rail anchor. G. N. Buzby et al. Railway switch. W. F. Edwards Railway switch. J. F. Yoho et al.	-
Railway switch J. F. Yono et al. Railway-switch electric-circuit controller . . G. M. Thompson	
Railway-switch electric-circuit controller. G. M. Thompson Railway-switch lock	ŋ
The 21 control of the	7
Ratchet drill, Chain breast, S. McClellan Razor-blade holder. F. C. Gorham Razor, Safety. L. Knaster Razor-stropping device. W. H. Shattuck Receptacle. P. G. Seward Receptacle. C. W. Johnson Recording or registering messages, memoranda, &c. Device for J. A. Gamble Reflector, Lann. H. Zirwas	7
Razor-stropping deviceW. II. Shattuck ReceptacleP. G. Seward	7
Recording or registering messages, memoranda, &c., Device forJ. A. Gamble	7
Reflector, Lamp. II. Zirwas Refrigerator, Window cold-air W. M. Howland Rerailer T. W. J. McGann	'] ') ')
Reversing mechanism. A. R. Murray	ij
Reversing mechanism. A. R. Murray Revolver. A. Fyrberg Riprapping system. J. M. Maher Road machine. W. K. Stebbins Road machine. H. B. and H. C. Moulthrop Road roller. M. J. Todd Rotary engine. A. Renik Retery engine. G. P. Seitz	'] ']
Road machine. H. B. and H. C. Monlthrop Road roller M. J. Todd	ſ
Rotary engine. A. Renk Rotary engine. G. E. Seitz Rotary motor. L. Stempfer	7
Rotary motor. L. Stempfer Saddle support. E. H. Pinkham Safety lock. N. Reinehr Salt and pepper shaker. M. F. Pane Sand-blast apparatus. W. P. Mott Sash fastener. J. A. Knasinski	7 7
Sand-blast apparatus. W. P. Mott Sash fastener. J. A. Knasinski))
Sash Window J. Beck et al. Sash Window J. J. Richardson	7
Saw filer and set	r r r
Saw filer and set	7 7 1
Scraper for disk openers. E. R. Beeman Scraper, Wheel. J. B. McClellan	J
Screen. D. Lewis Screen. C. D. Shrady ScuttleG. A. Nelson	T T
Screen. C. D. Shrady Scuttle	'I 'J
Self-locking boltW. Pausch et al. Sewing-machine attachment. J. O. Ostman Sewing-machine trimming mechanism	T T
Shaking grizzlyR. G. Woodward Shaping machineT. J. Gilliam	$_{ m T}^{ m T}$
Shaking grizzly . C. H. Gnnn Shaping machine . T. J. Gilliam Shears . F. D. Davies Shears . J. W. Channeey Sheet-metal cap . C. H. Werner	$\Gamma \Gamma \Gamma \Gamma$
Sheet-metal cap	1

IHE				EN
Sheet-metal pipe. Shelf, Corner. Shelf, Corner. Ship or vessel. C. J. I. Shoes, Corset for. Shoring. J. Shutter clamping device. Sifter, Ash. Sifter, Magazine flonr. Sink attachment. Skatc, Roller or wheeled. Skirt. J. A. Sled brake. Sluice gate. W. M. Smoke consumer. Smoke consumer. Smoke consumer. Soldering. F. C. Soldering machine. F. C. Sound deadener for rotary. Spark ping.	<u>I</u>	Į. Į	irn	baum andor
Ship or vesselC. J. I Shoes, Corset for	F. 3	i. I	illi. A	ander ehook zzara
ShoringJ Shutter clamping device	. R.		em V.	linger Kyler
Sifter, Ash	J	. 17. . 17.	V. W	Roper . Hill
Skate, Roller or wheeled SkirtJ. A.	M. and	S.	.ii Ci Gi	ishler rewen
Sled brake	Ċr	eag	l. S er	strnve et al.
Smoke consumer		J.	R. C.	Blaik Denis
Soldering machineF. C.	Was Wa	sma ssm	o. m	et al. et al.
Sound deadener for rotary	blo	wer Jibs	S	et al.
Spectacle mounting Speed-limiting apparatus. A			Sc. Late	loews rman
Spark piug. Spectacle mounting. Speed-limiting apparatus. I Speedometer	v. i om	wile	un l	Lany
Spoon holder	н Е Э С У		I. olel P	Davis kemer Smith
Spring construction	J.	'Н. Р.	Km Km	nuggs
Spring wheel Sprocket W Sprocket gear.	. jb	orto	A. 3	Moore et al.
Sputum receptacie	\	١.,١	4. U	erard
Stack cover. Stacker, Straw Stamp. Stamp-affixing machine.	(j. T W	3. 3 , 11	Shedd alane
Stamp-affixing machine	. Е. П.	П. А.	Sa Bei	nborn iediet
Steam and not-water boller Steam boiler Steam curine Rotary mult	: K : \ inle-	V. K V. S evli	ous S. I	e, Jr. Euttle
Stenciling machine	J.	Ă. L. J	Wa.	ltman Smith
Stamp-affixing machine Steam and hot-water boiler Steam boiler Steam engine, Rotary mult Stenciling machine Sterilizing and tempering gl paratus for. Stocking cap Stoker, Underfeed (2 pats.). Stool, FoldingF. vo Stool, Shoe salesman's Store-service credit-system	ass E.	D.	sels Sc	s, Ap- hmitt
Stoking (ap. Stoker, Underfeed (2 pats.). Stool, FoldingF. vo	 T n	P. I iese	55 W La, C 211 h	rowe ausen
Stool, Shoe salesman's Store-service credit-system	app	arat	us.	Sassel
Store-service credit-system Stove attachment, Gas-hea	ting). I	veri Dred	chsler
Stovepipe holder	J. S J	. B.	B	alker rodin
Straight edge and holder Strainer		Т. Е. W	1.	Gray Reed
Stud	ate	II. rial	C. int	Ward
Surveying instrument Switch (2 pats.)	J	. T P	'aka . F	uniue erber isling
Switch lock	 т.	. G. W	$\frac{\partial \Omega}{\partial V}$	ielser dams
Switches, Visual indicator 1	or I	203- [.].	ope	rated 'esley Lumis
Table attachment, Wildey	V	ν. Ί Α. Ι	ves	Smith stlake
Switch (2 pats.). Switch lock. Switch signal. Switches, Visual indicator f Switching device, Electric. Table attachment, Wilfiey. Tablet, Mouth. Tack loader. Talking-machine diaphragm. Tannic infusions of plants. treating	J s, []	laki S	ng,	oidge
Tannic infusions of plants, treating	Ele Ele	. w ctre koh	iyt ler	ically et al
Tapping-machine nut-feed Target Telegraph and telephone sys	.j.	O, 2 P.	L. S Xer	Smith wbold
Telegraph apparatus, Mult	R. (inle:	Jun	nin,	gham
Telegraphanele or fence-nest	D10	5. 1 1d	١.	Field
Telegraphic transmitting to apparatus for punching	.F. upes D	н. . Б	Ti- (ey)	dnam board recek
Telephone system	5. 1	./. \ 1 1	THE C	Грвен Грвен
Telephone systems, Selective for. Telephone systems, Switch	e rii . 15.	igin E.	g n Cle	ment
Telescope adjustment	A	. н	. L Ba	tyson Tusch
Tennis-court marker	Ċ.	.N. Me	H Fa	alsey rland
Testing gage and pump, Co	omb V. I	л. inat I. Т	ion tow	swell
Thermodynamic motor	R	P. H	Ιζ. [\ 1	Stern Vaite
Tide motorE. L. and	i. c	. si	. r	oneck
Tiles, &c., Apparatus for o Timepiece hair-spring colle	leco:	rati	ng.	
Timepieces, Driving train f	01.	.J.	${}_{^3}\mathrm{K}_{^3}$	ngas Jewis
Tire-protective armor	1. G	i. T	non I. I	ipson Beard
Tire-securing device	.г. ore,	Jr.	щр.	t al.
Tire, Resident Tire-securing device C. R. Sp. Tire, Vehicle Tires, Weblife easing for many	A	. J	. T	ilsou airns
Tires, Metallic casing for produced in the state of the s	Kin l	gsto B. 1	on e	et al. Ginn
Track-leveling jack-block Track sander. Trap. Trench-filling apparatus.	ind 11	E.	S. (Gross arris
Track sander Trap Trench-filling apparatus	W	. J	1. S . E ใกบ	mith Lubes some
troney for electric rantways	$\stackrel{\scriptstyle i}{\Lambda}$. $\stackrel{\scriptstyle i}{\iota}$	atei L. S	stei	nweg
Truck connection		100	STA	rens
Tubs, &c., Means for attacl O. H. M. Turbine. Type scale. V.	v.	V. Gr	Vel een	lman wood
Typewriting machine Typewriting machine Typewriting machine	.:B	. n	. r	teele
		,		

Typewriting machine
Typewriting machine
Typewriting machineJ. C. McLaughlin
Umbrella carrierG. V. Hnmma et al.
Umbrella drip cnpJ. T. Blnff Umbrella holder, Self-adjustingJ. E. Bell
Vacnum cleaning apparatus. F. E. Cochran
Valve
ValveJ. C. Thompson
Valve, Bottle-fillingR. Littler
Valve casing and pipe connectionF. Horn
Valve mechanism for gas pipes, Safety
Valve, ReducingJ. H. Derby
Valve regulator
forF. Conrad
Vegetable matter, TreatingG. D. Burton
Vehicle running gearH. E. Bradley
Vending machine
Ventuating apparatusJ. G. Garner Vessel, Collapsible and expansible
W. M. Fulton
vesser for carrying bulk cargo
Vessels, Flexible corrugated-metal wall for
Vise attachmentL. W. Palmer
Wall rackD. C. Williams
R. P. Hill
Wash boilerG. Robinson Washing clothesG. D. Burton
Washing machines, Motor-mounting for
Water closet
Water closet bowlA. T. Lueckenbach
Water-closet-valve operating connection
E. G. Watrous
E. C. Smith et al.
P. B. Clarke Vessels, Flexible corrugated-metal wall for collapsible and expansible. W. M. Fulton Vise attachment. L. W. Palmer Wall rack. D. C. Williams Warp reel and hand-loom tension
Wax hillsh, Eddid
Weft-fork spring
K. Farkas
Welt beaters, Work support forJ. J. Doidge
Wheel
Wheel rim, DemountableR. Healy
Winch (2 pats.)F. Metcalf et al.
Wind shieldJ. Hadka Winding-machine real — L. H. Ballon
Window and door screenW. S. Caldwell
window attachment, Storm
Window cleanerW. Stadt et al.
Vindow lockF. G. Andrews
Wire connectorP. F. Williams
Window fastener
TO TO STILL AND STREET
Wire ropeH. Leschen
Voven fabric
Wrecking bodies sunk in water, Method and
Wire rope
wrenchW. F. Bailey VrenchD. K. Hill
Vrench. E. R. Gilbert
Nrench. D. K. Hill Nrench. E. R. Gilbert Zinc pigments from liquors obtained from pyrites or pyrites-cinder and the like, Producing. J. H. Thwaites
ProducingJ. H. Thwaites
DESIGNS.
rush back and mirrorH. O. Bigney
Brush back and mirror. H. O. Bigney Cob and vinaigrette. S. O. Bigney Wass dish. T. C. Steimer
leadlight. R. H. Welles ewelry ornament U. W. Fishel Paper, Wrapping. D. C. Everest tug. E. H. Hill
ewerry ornament
ługE. H. Hill

Fob and vinaigrette	O. Bigney
Glass dishT.	C. Steimer
Headlight	H. Welles
Jewelry ornament	W. Fishel
Paper, WrappingD.	C. Everest
Rug	E. H. Hill

Issued November 22, 1910.

MECHANICAL PATENTS.

Accounting machine
Addressing machine E. D. Belknap
Advertising deviceF. Leschinski Advertising deviceP. Reeves Advertising deviceM. S. Wellman
AeroplaneF. Lebreil et al. Aiming device, SearchlightK. Weber
Air, Apparatus for producing carbureted R. Busch
Air brakeA. A. St. Clair AirshipH. Thaden Allyl sulfocarbamid bismnth tri-lodid
Animal trap. J. Drubko Animal trap or dip. L. Morris
AquariumJ. F. Wohlfahrt Automobile baggage carrierP. Evans Automobile gasolene tankR. Hayes
Automobile tilting bodyT. B. Jeffery Automobile wind screenE. W. Kingsley Automobiles, Combined carbureter-protect-
or and electric cutout forW. O. Nelson.
Axle bearing box, Self-lubricating car
Axle, Car. J. O. Neikirk Baling press. W. S. Livengood
-

Bar appliance
Basket, FruitN. E. Marshburn Bath-tub cover A Messenger
Bath wastes and overflows, Cleanout at-
Eatteries, Control for charging storage
Batteries, Electrolyte for alkaline
Batteries, Grid for reversible galvanie
Batteries, Making material for alkaline Batteries, Mannfacturing material for alkaline Batteries, Mannfacturing material for alkaline W. Morrison
Batteries Wannfacturing material for alka-
line
Batteries, Mannfacturing material for alkaline
Bearing, Center
Bearing with self-adjusting casing, Ball C. S. Lockwood
Belt-shifting mechanismE. Hixon et al Billiard tables, Apparatus for stretching
cloth onA. M. Hubert-Brierre Binder, Temporary E Wolff
BlowpipeB. C. Gilligan
Boat, Hydrophane motorJ. G. Hayden
Bolt lock, WedgeL. G. Roblin
Boot or shoe caps, Manufacture of Frey Boring device E. M. Cobb
Bottling machineA. A. Pindstofte Bottling machine, LiquidA. Schneider
Bowling apparatusC. C. Hildreth et al.
Brace J. T. Leckenby
Brake beam J. J. Hoffman
Bread-making compositionD. Chidlow
Brick-ejecting mechanismF. Rogerson Brick-ejecting mechanismF. Zagelmeyer
Brake beam
Brick-handling machineR. C. Penfield BrooderF. O. Pennev
Broom holder
Buckle. J. B. Hawkins
BurnerJ. P. Reinecke
Buttonhole cutterC. L. Rogers
Cable hanger
Calculating machineO. E. Cloud et al
Caliper gage. J. Dittrich et al. Camera I, O. Perring Canned goods, Apparatus for processing.
Canned goods, Apparatus for processing
Cane and similar substances, Apparatus for treating sugarG. D. Burton Cane mills, Hydraulic cap mechanism for
Cane mills, Hydraulic cap mechanism for
sugar. J. I. Løyer Cap-exploding deviceA. F. Lent Car arrester. L. Springer et al. Car bolster. J. F. O'Connor Car brake. M. A. Pahler Car-brake-beam safety-chain bolder.
Car arresterL. Springer et al. Uar bolsterJ. F. O'Connor
Car brake
Can Convertible regger gar reilway
Can coupling C. C. Harlin
Car couplingR. B. H. Leighton et al.
Car coupling
Car, DumpI. E. Tesseyman et al.
C. S. Shallenberger Car, Drop-bottom . A. Becker Car, Dump J. E. Tesseyman et al. Car-dumping mechanism (2 pats.) F. C. Greene Car-dumping mechanism, Continuous (2 pats.)
Car-dumping mechanism, Continuous
Car grain doorO. J. Olson
Car Passanger E T Pobinson
Car step, Folding R. W. Lomax
Car underframe, RailwayA. Becker
Cars, Friction draft-gear for railway. A. Becker Carbureter. R. W. Gallagher Carbureter. J. W. Walters Carbureter. S. Christofferson et al. Carbureter. II. M. Reichenbach Carbureter. O. C. Kreis, Jr. Carbureter and vaporizer for internal-combustion engines. A. Westmacott Carbureters, Air-controlling mechanism for J. M. Dayton
CarbureterR. W. Gallagher CarbureterJ. W. Walters
CarbureterS. Christofferson et al. CarbureterH. M. Reichenbach
CarbureterO. C. Kreis, Jr. Carbureter and vanorizer for internal-com-
bustion enginesA. Westmacott
J. M. Dayton
Card, Hand
Carding machine
Cartridge for reduced shotF. Hartmann Casing gear
Casket casc
Portland
Chain link forming machine
Carbureters, Air-controlling mechanism for J. M. Dayton Card case
Chandelicr supportJ. Rau Chemical-feeding deviceJ. E. Caps ChuckG. K. Garvin et al Cigar caseC. L'Enfant Cigarette machineJ. J. Daprato
Cigar case
Cigarette machineJ. J. Daprato Cigarette-mouthpiece machine
Circuit, SubstationJ. J. Lyng
Clamp. E. Athey
Clapping deviceS. R. Paradise
Clock-signal attachmentO. P. Ragan
piling
Clothes line
Cigarette machine. J. J. Daprato Cigarette-mouthpiece machine. W. Benjaminowitsch W. Benjaminowitsch Circuit, Substation. J. J. Lyng Clamp. E. Athey Clamp. S. R. Paradise Clamping device. S. R. Paradise Cleaning machine. A. A. H. Borjeson et al, Clock-signal attachment. O. P. Ragan Cloth in the desired lengths, Device for piling. S. Sampson Clothes hanger. P. Ashton Clothes line. W. O. Walston Clothes-line reel. L. T. Obele Coal, &c., Apparatus for washing, grading, and classifying. F. D. Baker
and classifyingF. D. Baker

Coating articles with pr Apparatus for	nlverulent material,
Apparatus for	H. Viertel et al.
Color box	A. TrieblingO. L. Albertson R. Knhle
Commodes and enspidors	s, Lifting tool for
Coin holder	H. Schroeder, Jr. F. Hartman et al.
forced	forced. J. A. Jones W. F. Bradley
Condenser system Conductor strip Conveyer link	L. R. AlbergerH. B. Collier .A. R. Laubenstein
Cooking apparatus Cooking device:	W. H. Dewees W. Fowler F. M. Delaih
Concrete column, girder forced. Concrete floor slab, Rein Concrete tie. Coudenser system. Conductor strip. Conveyer link. Cooker. Cooking apparatus. Cooking device. Cooling tower. Copper, Electrolyte for decremanding apparatus. Core, Green-sand. Core-making apparatus.	L. R. Alberger lepositing .W. G. Grey et al.
Core, Green-sand. Core-making apparatus. Corking machines, Devi tles to Corn-hnsking machinery Corn-shock carrier Corn tester, Seed Cotton chopper Cotton gins, Air-blast a	J. Gow lee for feeding hot-
Corn-hasking machinery Corn-shock carrier	E. C. SmallN. W. Lyon J. S. Naylor
Cotton chopper	H. T. SherwoodB. F. Mason pparatus for
Conpon-delivery machine	O. W. McDonald G. W. Stambaugh
Cultivator (2 pats.)	omrer
Cultivator shovel	and P. F. EckroatL. S. EllettJ. P. Stanza
Curtain rod	H. BenoitW. C. Coleman
Cutting head and bit Cutting-off tool Cycles Speed-regulating	V. St. John
Developing apparatus Dial. Altitude time	G. H. Pertniset A. C. Hayden F. J. Dick
Cotton chopper. Cotton gins, Air-blast a Conpon-delivery machine Culivator (2 pats.)	A. Carlson et al. eR. H. Seymour
Display apparatns Display device for carpT. Ditch gate	ets, &c
Door Grain	R. Goodwin
Door securer Door stop Door stop Donbling frame	A. Arens et al A. J. Prevost P. B. Whitehead
Doubling machines, St silk Draft device	opping device forP. SaraccoS. Rouse
Door stop. Door stop. Doobling frame. Doubling machines, St silk. Draft device. Draftsman's table. Drilling machine. A. C Drinking fountain. Driving mechanism. Driving mechanism, Fr Dye.	G. and E. G. Seherg J. M. Kaminsky J. Bocker
Driving mechanism, Fr Dye	ictionR. Norris M. Weiler oK. Schnitzspahn
Dyeing apparatus, Yarn. Dyeing half-woolen good Egg tester. Electric alarm and call-	.J. M. Payne et al. dsG. Rudolph W. Schroeder
Electric connecting devi	-bell system J. H. Field ceH. C. Wirt
Electric aiarm and can Electric connecting devi Electric currents of his paratus for producing Electric heater. Electric machine, Dynar Electric switch	S. G. Brown
Electric switch	R. B. WilliamsonJ. H. Wooll
Electrical-distribution sy. R. N. C. R. N. C. Electrical heater M. I. Electrical switch. Electrode, Storage-batter	Chamberlain et al. H. Shoenberg et al. J. D. Hilliard
Electrode, Storage-batter	r. A. Edison et al.
Electrode, Storage-batter Elevated carrier Emulsions, Mechanism for ing Engine Engine cranking device,	W. G. Schroder Antomobile
Engine sparking plug, I	nternal-eombustion R. F. Hall
Eugines, Compounding a paratus for locomotive Engines, Exhaust manife	and condensing ap- L. D. Copeland old or pipe connec-
Engine cranking device, Engine sparking plug, I Engines, Compounding a paratus for locomotive Engines, Exhaust manifo tion for explosion. Engines, Means for fac ing of internal-combus Engiues, Spark-timing d	ilitating the start- tionF. Purdy
Equalizer, Three-horse	E. A. Cooper W. L. Carey L. A. Larson
Engiues, Spark-timing d Equalizer, Three-horse Excavating apparatus Excavating machine (2 p Exeavator bucket Explosives, Incorporatin Fabric, Apparatus for tr	ats.)D. W. MillerO. J. Martinson g ingredients of
Fabric, Apparatus for tr	reating eoated tex- .A. Sydeman et al.
Farm roller	alA. C. Fraser 's eash C. G. Reiff
file. Fan or pnmp, Centrifug Fare register, Conductor Farm roller. Fastener. Combination. Feed mill. Feed mixer. Feed-water-heating device Fence post. Fence post. Metallic. Fence. Temporary. Fertilizer.	R. F. PickardJ. C. WoodeoekC. H. Hinkhouse
Feed-water-heating device Fence postJ. A. Fence post, Metallic	eJ. Fonruia and W. A. Warner G. W. Weil
Fence, Temporary. Fertilizer. Fifth wheel, Antifriction Filament or resistor fo lampsH.	W. J. WilliamsC. Ellis nS. C. Bancam r beating units or
lampsH.	r heating units or 1 C. Parker et al. I

Filaments, Manufacture of electric (4 pats.) C. A. von Welsbach	Liquid-fnel burnerW. R. McHill Liquids, Compressed-air apparatus for ele-
Film developerA. C. Hayden Fire-alarm system, Electrical. J. II. Field Fire-extinguisher system	vatingL. S. Matheus et al. Liquids with coagulants, Apparatus for impregnatingJ. W. Ledoux
Fire-extinguishing apparatusII. Budd Fireplace fender and screen	Lister attachment
Fireplace furnace	Lock
Floor surfacing machineF. H. Wright Fluid in conduits, Device for establishing a pulsing motion ofG. Dalen	Locomotive-boiler washing and retilling ap-
Flushing and heating system. J. E. Morgan Fly catcher	paratusD. W. Chuningham Locomotive, Steam-storageG. L. Wall et al.
Flying machineS. H. French Flying machineJ. H. Wilson Flying machines, Automatic balancing	Locomotives, Sanding-pipe forE. Ryan Locomotives for use in conduits
mechanism forW. F. Snllivan Food, Making a eercal breakfast H. Anhaltzer	Loom stop-motion
Food product from cereal sprouts, Manufacture of a	in
turing artificialF. Hamel FumigatorJ. C. Kemball	LubricatorJ. A. Coopers et al. Lumber, Machine for dovetailing and join- ingB. A. Linderman
FurnaceJ. B. Bartick Fnrrow-opener drag-barF. R. Packham et al.	Magnet, RelayJ. F. McElroy et al. Mail-delivery apparatusJ. B. Cary Mail-pouch-exchanging apparatus
GageS. W. Ladd Game apparatusC. E. Prickett Garment claspO. Kampfe	Mailing device
Garment hangerL. P. Wilson Gas-distributing systemG. A. Hanly et al. Gas engiueE. F. Prall	Marking machine, FabricJ. A. Shufelt Marking potW. H. Scott
Gaseons-fluid mixerH. W. Webb et al. Gear, ReversingR. B. Crnmp	Massage machineE. E. Ziegler Match-box holderC. E. Wirth Match case, PocketJ. J. Manchester
Gearing, ReverseH. A. Garrison GlasswareO. A. Mygatt Golf clubM. W. Hollingsworth	Match-striking cabinetC. R. Smith MattressC. I. Flintoft Mattress side guard, Spring
Golf clnbA. F. Knight Governors, Standardizing device for G. J. Henry, Jr.	Mattress side gnard, SpringJ. Luppino Mctal rollerA. Gross
Graders, Throwing wheel for	Metal-shaping machineG. Sonnenthal et al. Metals, Uniting (2 pats.)
GrateW. N. Snow Grinder, DieW. A. Leonard	Milking mechanismD. T. Sharples
Guitar	Milking vessel
Hammock hookF. R. Eldridge Handsaw, Power-operatedW. II. Henderson	Mining-machine bit. R. E. Noble Miter box. A. Robbins Miter box. W. Fnhrmann
Harness attachmentF. G. Black Harrow T. J. McWilliams Harrow, Rotary J. T. Cunningham	Miter box W. Fnhrmann Molding apparatus T. De la Hnnty Molding machine J. A. Williams Molding machine E. B. Sheets
Harvester, Cane	Molding machineE. Ronceray Mop head and wringer, Combined
Head-gate lockD. J. Elliott et al.	Mop wringer
HeadlightF. Kohont et al. Heel, Boot and shoeH. W. Cook HingeW. D. Paynter	Motor C. L. Wilkins Motors, End ring for induction
Hoe, Horse	Music-leaf turnerI. J. Ponstein Music-leaf turnerA. I. Johnson Musical instrument, StringedJ. J. Roche
Horseshoe. F. F. Stanek Horseshoe. M. Klein Hose carrier. A. P. Bolner	Nail-holding attachmentJ. R. Morrison Necktie and collar fasteningL. J. F. Hubert
Hose drier	Needle, SeineE. Randolph Numbering machineJ. H. Reinhardt
Hosiery L. A. Costello Hub, Automobile wheel . C. T. Hixson et al. Humidor C. B. Carstens	Nut and boltW. E. HorrocksNut lockD. W. LovettNut lockW. C. Schumpert
Ice-cream-freezer dashcr. M. Ohrynoweech Ice cream, sherbct, &c., Mannfacturing G. D. Burton	Oil burner
Ice-cream spoon (Reissue)	Oil-burning apparatns, Crude
Illusion, StageJ. G. Bostock Incandescent materials, Apparatus for quenchingE. H. H. Kranse	Oil cup. R. L. Holehouse Ore jig. G. H. Williams
Ingots, Treating metalJ. A. Brinell Internal-combustion engineW. Johnson Internal-combustion engineP. M. Allman	Ore-roasting furnaceJ. B. F. Herreshoff Ore-roasting kiln, AnnularJ. Zellweger
Invalid lifter, HydraulicT. M. Smith Ironing board, FoldingG. L. Baxter	Oven, BakingJ. G. Redford Packing for steam turbinesG. Huhn Packing, PistonR. A. Fowden
Ironing boards, &c., Support for W. A. Kuhnert Irrigation systemW. A. Lee	Pail holder, MilkE. and C. L. Moore Pail holder, MilkE. W. Rose Paper cufferL. A. Reiser
JackL. Willour Jar closureF. M. Lelles Journal-bearing sleeve, Renewable	Paper cutterL. A. Reiser Paper-feeding deviceG. E. Hardman Paper-making machines, Suction-roll for J. F. King et al.
Key fastenerF. D. Johnson Knife-polishing machineG. F. Lawrence	Peanut roasterI. R. Anderson Pen and pencil holderE. A. Crosby
Knitting machineR. W. Scott Knitting-machine attachment, Warp	Pen. Self-filling fountainJ. Lipic PenholderJ. Jacobs PeriscopeJ. Humbrecht
Knob, Door, E. Winne Knockdown box F. R. Vernon	Phonograph
Labels around rectaugular tablets, Machine for wrapping and affixingF. Grover LampW. C. Coleman	
Lamp, Automatically-flashing electric W. J. Phelps Lamp bracketT. H. Cassidy	Photographie plate or film holder
Lamp burner.A. M. PorterLamp, Carbid.S. SimmonsLamp-globe shield.J. E. Eastmond	Rail joint G. Mack Rail switch T. R. Dunean
Lamp, IncandescentG. F. Atwood Lamp, Miner'sM. J. Curtis	Photographic shutterF. P. Whitehead Picking mechanismL. E. Mellor et al.
Lamp soeket, ElectricJ. S. StewartLamp standW. McNairLand rollerD. F. Williams	Pigments, Preparing F. M. Becket Pile L. E. Welsh Piling J. J. Jones
Lasts, Heel-seat extension for J. A. Dow Latch	Pipe-bending machineG. II. Reynolds Pipe coupling, Automatic train M. Segal et al.
Leather board, Manufacturing substitutes forA. J. Ostberg	Pitchfork attachmentC. A. Dnprey PlanterA. J. II. Reid Planter and fertilizer distributer, Com-
Level-eontrolling deviceC. A. Brown Life-saving apparatusJ. L. Winkler	bined
Lift compressing and distributing machine	Plow and seed planter, Garden
Liquid eoolerJ. F. McElroy Liquid eoolerE. P. Hopkins Liquid-fuel burnerW. Scrimgeour	Plow attachment B. A. Morris Plow, Gang W. Berndt Plow, Gang H. C. Clay
Liquid-fnel burnerB. Moore Liquid-fnel burnerL. C. Morse	Plows, Side-draft equalizer for sulky A. Lukl et al.

Limit fuel large and the Marketta
Liquids, Compressed-air apparatus for elevatingL. S. Matheus et al. Liquids with coagulants. Apparatus for in-
pregnating. J. W. Ledoux Lister attachment. W. J. Steele Loading machine. W. Whaley
Lock M. Shepard Lock F. Soley Lock W. Curtlett Locking mechanism for emboards
Liquid-fnel burner. W. R. McIlill Liquids, Compressed-air apparatus for elevating. L. S. Matheus et al. Liquids with coagulants, Apparatus for impregnating. J. W. Ledoux Lister attachment. W. J. Steele Loading machine W. Whaley Lock. M. Shepard Lock. F. Soley Lock. W. Curtlett Locking mechanism for cupboards. P. W. Hodgkinson Locomotive-boiler washing and retilling apparatus. D. W. Chuningham Locomotive, Steam-storage. G. L. Wall et al. Locomotives, Sanding-pipe for E. Ryan Locomotives for use in conduits. G. G. Fryer et al.
Locomotive, Steam-storage. Locomotives, Sanding-pipe forE. Ryan Locomotives for use in conduits.
Loom warp stop mechanism. C. D. Lanning Loom warp stop mechanism. C. D. Lanning
ubricator
Lumber, Machine for dovetailing and joining. B. A. Linderman Magnet, Relay. J. F. McElroy et al. Mail-delivery apparatus. J. B. Cary Mail-pouch-exchanging apparatus. W. F. Knapp Mailing device. A. Clutter Mangle-feeding mechanism. D. M. Cooper Marking machine, Fabric. J. A. Shufelt Marking pot. W. H. Scott Massage machine. E. E. Ziegler Match-box holder. C. E. Wirth Match case, Pocket. J. J. Manchester Match-striking cabinet. C. R. Smith Mattress. C. I. Flintoft
Mailing device
Marking pot. W. H. Scott Massage machine. E. E. Ziegler Match-box holder. C. E. Wirth
Match case, PocketJ. J. Manchester Match-striking cabinetC. R. Smith MattressC. I. Flintoft Mattress side guard, Spring
Mattress side gnard, Spring. J. Luppino Mctal roller
Metals, Uniting (2 pats.)
Milking mechanism. D. T. Sharples Milking vessel. C. S. Moore Milling apparatus. E. H. Martin
Mine and the like, FloatingH. Lacy Mining-machine bitR. E. Noble
Miter box
Molding machineE. B. Sheets Molding machineE. Ronceray Mop head and wringer, Combined
Mop wringer. H. C. White et al. Motor. C. W. Weiss Motor. C. L. Wilkins Motors. End ring for induction.
Music-leaf turner J. Ponstein Music-leaf turner
Musical instrument, StringedJ. J. Roche Nail-holding attachmentJ. R. Morrison Necktie and collar fastening
Musical instrument, Stringed J. J. Roche Nail-holding attachment J. R. Morrison Necktie and collar fastening. L. J. F. Hubert Needle, Seine . E. Randolph Numbering machine J. H. Reinhardt Nut and bolt
Musical instrument, Stringed. J. J. Roche Nail-holding attachment. J. R. Morrison Necktie and collar fastening. L. J. F. Hubert Needle, Seine. E. Randolph Numbering machine. J. H. Reinhardt Nut and bolt. W. E. Horrocks Nut lock. D. W. Lovett Nut lock. W. C. Schnimpert Oil burner. P. G. Hubert
Musical instrument, Stringed. J. J. Roche Nail-holding attachment. J. R. Morrison Necktie and collar fastening. L. J. F. Hubert Needle, Seine. E. Randolph Numbering machine. J. H. Reinhardt Nut and bolt. W. E. Horrocks Nut lock. D. W. Lovett Nut lock. W. C. Schnmpert Oil burner. Crude. E. G. L. Gregson Oil burner, Crude. S. McNabb Oil-burning apparatns, Crude.
Musical instrument, Stringed. J. J. Roche Nail-holding attachment. J. R. Morrison Necktie and collar fastening. L. J. F. Hubert Needle, Seine. E. Randolph Numbering machine. J. H. Reinhardt Nut and bolt. W. E. Horrocks Nut lock. D. W. Lovett Nut lock. W. C. Schnmpert Oil burner. Crude. E. G. L. Gregson Oil burner, Crude. S. McNabb Oil-burning apparatns, Crude. A. R. Kunkel Oil can and lubricator, Combined. C. Arthur
Musical instrument, Stringed. J. J. Roche Nail-holding attachment. J. R. Morrison Necktie and collar fastening. Needle, Seine. L. J. F. Hubert Numbering machine. J. H. Reinhardt Nut and bolt. W. E. Horrocks Nut lock. D. W. Lovett Nut lock. D. W. Lovett Nut lock. W. C. Schnmpert Oil burner. Crude. E. G. L. Gregson Oil burner, Crude. S. McNabb Oil-burning apparatns. Crude. Oil can and lubricator. Combined. C. Arthur Oil cup. R. L. Holehouse Ore jig. G. H. Williams Ore-roasting furnace. J. B. F. Herreshoff Ore-roasting kiln, Annular. J. Zellweger
Musical instrument, Stringed. J. J. Roche Nail-holding attachment. J. R. Morrison Necktie and collar fastening
Musical instrument, Stringed. J. J. Roche Nail-holding attachment. J. R. Morrison Necktie and collar fastening
Match-box holder C. E. Wirth Match case, Poeket J. J. Manchester Match-striking cabinet C. I. Flintoft Mattress C. I. Flintoft Mattress side gnard, Spring J. Luppino Metal roller A. J. Kreuzkamp Mattress side gnard, Spring J. Luppino Metal roller A. Gross Metal-shaping machine G. Sonnenthal et al. Metals, Uniting (2 pats.). Metals, Uniting (2 pats.). Milking mechanism D. T. Sharples Milking vessel C. S. Moore Milling apparatus E. H. Martin Mine and the like, Floating H. Lacy Mining-machine bit R. E. Noble Miter box A. Robbins Miter box W. Finhrmann Molding apparatus T. De la Hinny Molding machine J. A. Williams Molding machine E. B. Sheets Molding machine E. Ronceray Mop head and wringer, Combined. J. S. O'Brien Mop wringer H. C. White et al. Motor C. W. Weiss Motor C. L. Wilkins Motors, End ring for induction Music-leaf turner A. I. Johnson Music-leaf turner A. I. Johnson Music-leaf turner A. I. Johnson Necktie and collar fastening Necktie and collar fastening Necktie and collar fastening Necktie and collar fastening Numbering machine J. H. Reinhardt Nut and bolt W. E. Horrocks Nut lock D. W. C. Schmppert Oil burner, Crude S. McNabb Oil-burning apparatus, Crude Oil can and lubricator. Combined Ore-roasting furnace J. B. F. Herreshoff Ore-roasting furnace G. E. Hardman Packing for steam turbines G. E. Hardman Packing for steam turbines G. E. Hardman Packing for steam turbines G. E. Hardman Paper-making machines, Suction-roll for .
Musical instrument, Stringed. J. J. Roche Nail-holding attachment. J. R. Morrison Necktie and collar fastening. L. J. F. Hubert Needle, Seine. E. Randolph Numbering machine. J. H. Reinhardt Nut and bolt. W. E. Horrocks Nut lock. D. W. Lovett Nut lock. D. W. Lovett Nut lock. D. W. C. Schnmpert Oil burner. Crude. P. G. Hubert Oil burner, Crude. S. McNabb Oil-burning apparatns, Crude. A. R. Kunkel Oil can and lubricator, Combined. C. Arthur Oil cup. R. L. Holehouse Ore jig. G. H. Williams Ore-roasting furnace. J. B. F. Herreshoff Over-roasting furnace. J. B. F. Herreshoff Oven. Baking. J. G. Redford Packing for steam turbines. G. Huhn Packing, Piston. R. A. Fowden Pail holder, Milk. E. and C. L. Moore Pail holder, Milk. E. and C. L. Moore Paper-feeding device. G. E. Hardman Paper-making machines, Suction-roll for J. F. King et al. Peanut roaster. J. R. A. A. Crosby Pen. Self-filling fountain. J. Lipic
Musical instrument, Stringed, J. J. Roche Nail-holding attachment. J. R. Morrison Necktie and collar fastening. L. J. F. Hubert Needle, Seine. E. Randolph Numbcring machine. J. H. Reinhardt Nut and bolt. W. E. Horrocks Nut lock. D. W. Lovett Nut lock. W. C. Schmmpert Oil burner. Crude. E. G. L. Gregson Oil burner, Crude. S. McNabb Oil-burning apparatus, Crude. Oil can and lubricator. Combined. C. Arthur Oil cup. R. L. Holehouse Ore jig. G. H. Williams Ore-roasting furnace. J. B. F. Herreshoff Ore-roasting furnace. J. B. F. Herreshoff Ore-roasting furnace. J. B. F. Herreshoff Ore-roasting furnace. J. B. G. Redford Packing for steam turbines. G. Huhn Packing, Piston. R. A. Fowden Pail holder, Milk. E. and C. L. Moore Pail holder, Milk. E. and C. L. Moore Pail holder, Milk. E. and C. L. Moore Pail holder, Milk. E. W. Rose Paper cutter. L. A. Reiser Paper-feeding device. G. E. Hardman Paper-making machiues, Suction-roll for Peannt roaster. J. R. Anderson Pen and pencil holder E. A. Crosby Pen. Self-filling fountain J. Lipic Penholder J. Jacobs Periscope J. Humbrecht Phonograph W. W. F. Schenwetten
Paper-freeding device. G. E. Hardman Paper-making machines, Suction-roll for J. F. King et al. Peannt roaster. J. R. Anderson Pen and pencil holder. E. A. Crosby Pen. Self-filling fountain. J. Lipic Penholder. J. Jacobs Periscope. J. Humbrecht Phonograph. W. H. Miller Phonograph sound box. A. F. Schonwetter Photographic-film-developing apparatus. W. F. C. Kelly et al. Photographic lenses Shutter-graphing de-
Paper-freeding device. G. E. Hardman Paper-making machines, Suction-roll for J. F. King et al. Peannt roaster. J. R. Anderson Pen and pencil holder. E. A. Crosby Pen. Self-filling fountain. J. Lipic Penholder. J. Jacobs Periscope. J. Humbrecht Phonograph. W. H. Miller Phonograph sound box. A. F. Schonwetter Photographic-film-developing apparatus. W. F. C. Kelly et al. Photographic lenses Shutter-graphing de-
Paper-leeding device. G. E. Hardman Paper-making machines, Suction-roll for J. F. King et al. Peanut roaster. J. R. Anderson Pen and pencil holder. E. A. Crosby Pen. Self-filling fountain. J. Lipic Penholder. J. Jacobs Periscope. J. Humbrecht Phonograph. W. H. Miller Phonograph sound box. A. F. Schonwetter Photographic-fi.m-developing apparatus W. F. C. Kelly et al. Photographic lenses, Shutter-operating device for. S. Roesner Photographie plate or film holder E. A. Fifield Photographie-printing cabinet.
Paper-leeding device. G. E. Hardman Paper-making machines, Suction-roll for J. F. King et al. Peanut roaster. J. R. Anderson Pen and pencil holder. E. A. Crosby Pen. Self-filling fountain. J. Lipic Penholder. J. Jacobs Periscope. J. Humbrecht Phonograph. W. H. Miller Phonograph sound box. A. F. Schonwetter Photographic-fi.m-developing apparatus W. F. C. Kelly et al. Photographic lenses, Shutter-operating device for. S. Roesner Photographie plate or film holder E. A. Fifield Photographie-printing cabinet.
Paper-leeding device. G. E. Hardman Paper-making machines, Suction-roll for J. F. King et al. Peanut roaster. J. R. Anderson Pen and pencil holder. E. A. Crosby Pen. Self-filling fountain. J. Lipic Penholder. J. Jacobs Periscope. J. Humbrecht Phonograph. W. H. Miller Phonograph sound box. A. F. Schonwetter Photographic-fi.m-developing apparatus W. F. C. Kelly et al. Photographic lenses, Shutter-operating device for. S. Roesner Photographie plate or film holder E. A. Fifield Photographie-printing cabinet.
Paper-leeding device. G. E. Hardman Paper-making machines, Suction-roll for J. F. King et al. Peaunt roaster. J. R. Anderson Pen and pencil holder. E. A. Crosby Pen. Self-filling fountain J. Lipic Penholder. J. Jacobs Periscope. J. Humbrecht Phonograph. W. H. Miller Phonograph sound box. A. F. Schonwetter Photographic-film-developing apparatus. W. F. C. Kelly et al. Photographic lenses, Shutter-operating device for S. Roesner Photographie-printing cabinet. F. A. Fifield Photographie-printing cabinet. Rail joint C. G. Mack Rail switch T. R. Dunean Photographic shutter F. P. Whitehead Picking mechanism L. E. Mellor et al. Pigments, Preparing F. M. Bocket Pile L. E. Welsh Pilling J. J. Jones Pipe-bending machine G. H. Reynolds Pipe coupling, Automatic train
Paper-leeding device. G. E. Hardman Paper-making machines, Suction-roll for J. F. King et al. Peaunt roaster. J. R. Anderson Pen and pencil holder. E. A. Crosby Pen. Self-filling fountain J. Lipic Penholder. J. Jacobs Periscope. J. Humbrecht Phonograph. W. H. Miller Phonograph sound box. A. F. Schonwetter Photographic-film-developing apparatus. W. F. C. Kelly et al. Photographic lenses, Shutter-operating device for S. Roesner Photographie-printing cabinet. F. A. Fifield Photographie-printing cabinet. Rail joint C. G. Mack Rail switch T. R. Dunean Photographic shutter F. P. Whitehead Picking mechanism L. E. Mellor et al. Pigments, Preparing F. M. Bocket Pile L. E. Welsh Pilling J. J. Jones Pipe-bending machine G. H. Reynolds Pipe coupling, Automatic train
Paper-leeding device. G. E. Hafman Paper-making machines, Suction-roll for J. F. King et al. Peaunt roaster. J. F. King et al. Peaunt roaster. J. R. Anderson Pen and pencil holder. E. A. Crosby Pen. Self-filling fountain J. Lipic Penholder. J. Jacobs Periscope. J. Humbrecht Phonograph. W. H. Miller Phonograph. W. H. Miller Phonograph sound box. A. F. Schonwetter Photographic-film-developing apparatus. W. F. C. Kelly et al. Photographic lenses, Shutter-operating device for S. Roesner Photographic plate or film holder. F. A. Fifield Photographie-printing cabinet. F. A. Fifield Photographic shutter. F. D. Mouzon Rail joint C. G. Mack Rail switch T. R. Dunean Photographic shutter F. P. Whitehead Picking mechanism L. E. Mellor et al. Pigments, Preparing F. M. Becket Pile L. E. Welsh Piling J. J. Jones Pipe-bending machine G. H. Reynolds Pipe-bending machine G. H. Reynolds Pipe coupling, Automatic train. M. Segal et al. Pitchfork attachment C. A. Dnprey Planter A. J. H. Reid Planter and fertilizer distributer, Combined C. Linder Planter marker, Corn. S. B. Artz Plow P. Krug
Paper-leeding device. G. E. Hardman Paper-making machines, Suction-roll for J. F. King et al. Peaunt roaster. J. R. Anderson Pen and pencil holder. E. A. Crosby Pen. Self-filling fountain J. Lipic Penholder. J. Jacobs Periscope. J. Humbrecht Phonograph. W. H. Miller Phonograph sound box. A. F. Schonwetter Photographic-film-developing apparatus. W. F. C. Kelly et al. Photographic lenses, Shutter-operating device for S. Roesner Photographie-printing cabinet. F. A. Fifield Photographie-printing cabinet. Rail joint C. G. Mack Rail switch T. R. Dunean Photographic shutter F. P. Whitehead Picking mechanism L. E. Mellor et al. Pigments, Preparing F. M. Bocket Pile L. E. Welsh Pilling J. J. Jones Pipe-bending machine G. H. Reynolds Pipe coupling, Automatic train

Dlove choff
Plow shaft
Plow shaft. C. A. Ryan Pneumatic cleaner E. and W. E. Gross et al. Pneumatic-despatch-tube apparatus J. T. Needham Polishing head E. T. Podard Powder divider, Proportional W. Vottele al. Power generator L. J. Cavanaugh et al. Pressing and finishing iron, Steam R. W. Hull Pressing machine H. Lindestron
Pressing and finishing iron, Steam
Printing or other machines, Machine for feeding bags toL. J. Elsas
Printing press sheet-delivering mechanish W. H. Stratton
Printing press
marineL. Dioi Pulley, SplitW. H. Stockhan Pulp or paper press, Hydranlic.
Pulverizer G. J. Peterson Pump M. Luoun
Pump, Centrifugal B. W. Biant Pump, Centrifugal R. Salzer Pump-pipe insertor and remover. W. L. Rhodes
Printing mechanism, WellW. T. Gray Puzzle lockN. D. Gray Pyrophoris massC. A. von Welsback Padiator
Radiator, ElectricJ. A. Tupper Radiator, Sheet-metalR. E. Mashee Rail bondE. M. Weave
Rail, TractionE. M. Boynton Rails and preventing the spreading thereof Means for fasteningb. H. Martin, Jr
Rails and preventing the spreading thereof Means for fastening. D. H. Martin, Jr Rails to ties, Machine for spiking
Railway system Railway system F. M. Barret Railway system F. M. Baynton
Railway tie. J. J. O'Donnel Railway tie. Concrete. R. J. D. Cowal Railway traction member. E. M. Boynton
Raisin scederW. C. Anderson Ram, HydraulicB. J. Carrol Razors, Safety shield and self-sharpener
for C. A. Harris Reamer, Adjustable W. H. Pugh et a Refrigerator W. W. Dunba
Registering-machine driving device C. F. Kettering
Relay, Electrical. F. Ritchic Repair gland. O. K. Negley Resilient wheel. H. E. Moebus
Rivet-drilling machineA. Gerrard
Rolling black plates or sheets (Reissue).
Rolling black plates or sheets (Reissue) W. H. Donne: Rotary engine L. O. Gilliland Rotary engine C. A. Bende: Ruling device, Line E. Pickwick, Jr
Rocket, Gyroscopic Gherassinor Rolling black plates or sheets (Reissue). W. H. Donner Rotary engine L. O. Gilliland Rotary engine E. Pickwick, Jr Rural-route boxes, Coin and letter holder for W. E. Ayer Rust cleaner C. R. Cannor
Registering-machine driving device
Scale, Wagon A. W. Fairchile
Scale, Wagon A. W. Fairchile
Scale, Wagon A. W. Fairchild Scoring-machine attachment A. T. Meyer Scraper bucket
Scale, Wagon A. W. Fairchild Scoring-machine attachment A. T. Meyer Scraper bucket
Scale, Wagon A. W. Fairchild Scoring-machine attachment A. T. Meyer Scraper bucket
Scale, Wagon A. W. Fairchild Scoring-machine attachment A. T. Meyer Scraper bucket
Scale, Wagon A. W. Fairchild Scoring-machine attachment A. T. Meyer Scraper bucket
Scale, Wagon A. W. Fairchild Scoring-machine attachment A. T. Meyer Scraper bucket
Scale, Wagon A. W. Fairchill Scoring-machine attachment A. T. Meyer Scraper bucket
Scale, Wagon A. W. Fairchill Scoring-machine attachment A. T. Meyer Scraper bucket
Scale, Wagon A. W. Fairchill Scoring-machine attachment A. T. Meyer Scraper bucket
Scale, Wagon A. W. Fairchill Scoring-machine attachment A. T. Meyer Scraper bucket
Scale, Wagon. A. W. Fairchill Scoring-machine attachment. A. T. Meyer Scraper bucket. H. L. Glaze Scraper-shaping device. W. B. Cambron Screw-head shaping and slotting device. G. T. Warwick Seal. F. Egg Seal. Jar. C. R. Keeran Sealing caps, Merchantable package of jan H. A. Spiller Sealing machines, Conveyer for carton. H. L. Johnson Seaming can heads to can bodies. J. Holland et al Secondary battery (Reissue). W. Morvison Service-meter system. G. A. Joy Sewing machine, M. G. and A. Rosenthal Sewing machine, Blindstitch. H. H. and J. E. Fefe Sewing machine bnttonhole-stitching attachment. E. J. Boyler Sewing machine, Shoe. A. B. Fowler Sewing machine, Wax-thread. C. Pedersen Shackle. A. Thomson Shade attachment, Window. E. S. Taylon Shaft connection. Elastic. F. Tyson Shaft
Scale, Wagon. A. W. Fairchill Scoring-machine attachment. A. T. Meyer Scraper bucket. H. L. Glaze Scraper-shaping device. W. B. Cambron Screw-head shaping and slotting device. G. T. Warwick Seal. F. Egg Seal. Jar. C. R. Keeran Sealing caps, Merchantable package of jan H. A. Spiller Sealing machines, Conveyer for carton. H. L. Johnson Seaming can heads to can bodies. J. Holland et al Secondary battery (Reissue). W. Morvison Service-meter system. G. A. Joy Sewing machine, M. G. and A. Rosenthal Sewing machine, Blindstitch. H. H. and J. E. Fefe Sewing machine bnttonhole-stitching attachment. E. J. Boyler Sewing machine, Shoe. A. B. Fowler Sewing machine, Wax-thread. C. Pedersen Shackle. A. Thomson Shade attachment, Window. E. S. Taylon Shaft connection. Elastic. F. Tyson Shaft
Scale, Wagon. A. W. Fairchill Scoring-machine attachment. A. T. Meyer Scraper bucket. H. L. Glaze Scraper-shaping device. W. B. Cambron Screw-head shaping and slotting device. G. T. Warwick Seal. F. Egg Seal. Jar. C. R. Keeran Sealing caps, Merchantable package of jan H. A. Spiller Sealing machines, Conveyer for carton. H. L. Johnson Seaming can heads to can bodies. J. Holland et al Secondary battery (Reissue). W. Morvison Service-meter system. G. A. Joy Sewing machine, M. G. and A. Rosenthal Sewing machine, Blindstitch. H. H. and J. E. Fefe Sewing machine bnttonhole-stitching attachment. E. J. Boyler Sewing machine, Shoe. A. B. Fowler Sewing machine, Wax-thread. C. Pedersen Shackle. A. Thomson Shade attachment, Window. E. S. Taylon Shaft connection. Elastic. F. Tyson Shaft
Scale, Wagon A. W. Fairchill Scoring-machine attachment A. T. Meyer Scraper bucket

olo I
Soil-sterilizing furnaceA. P. Young Sound-producing device J. P. Northey Spark plugG. E. Edick Speculum, Mouth J. F. Koehler Speed indicator and recorderA. D. Renfro Speed indicator, Ship'sL. A. Cotton Speed-regulating device for automobiles and
Speed indicator and recorder. A. D. Renfro Speed indicator, Ship'sL. A. Cotton Speed-regulating device for automobiles and
Speed-regulating device for automobiles and the like
Spring wheel
Stanchion. C. W. McLean Stationery box. W. A. Gray Steel and iron ingots, Treating
Steneiling machine. A. J. Smith Stirrup, Saddle. J. F. Shultz Stitching machine. C. T. Adair et al.
Stone collector, Field. E. L. Kloss Storage battery. T. A. Edison Stove attachment. W. H. Prall Stove-lid and pan lifter Combined
Spring wheel. J. A. Wible Stalk cutter. C. F. Witten Stamping-machine safety-gnard. J. M. Jones Stanchion. C. W. McLean Stationery box. W. A. Gray Steel and iron ingots, Treating. J. A. Brinell Steneiling machine. J. F. Shultz Stitching machine. J. F. Shultz Stitching machine. C. T. Adair et al. Stock marker, Live. F. R. Stevens Stone collector, Field. E. L. Kloss Storage battery. T. A. Edison Stove attachment. W. H. Prall Stove-lid and pan lifter, Combined. P. Slnstrop Stove oil-bnrner attachment. F. P. Beucler Stove protecting device, Gas. L. J. Llvingston Stovepipe lock. C. Roney Stovepipe openings, Adjustable cap for stansforming boiled. W. J. Slnka Sulfids or sulfates, Treating. U. Wedge Supporting device. L. L. Lederer Surgical binder. R. V. Coddington
Stovepipe lock. C. Roney Stovepipe openings, Adjustable cap for S. S. Wales
Sugar into a creamy paste, Machine for transforming boiledW. J. Sluka Sulfids or sulfates, TreatingU. Wedge Supporting deviceJ. L. Lederer
Switch II. W. Cheney Table I. Weingaerther Telegraph transmitter I. C. Barclay
Telephone mouthpiece. J. A. Hall Telephone receiver. H. R. Stuart Telephone system, Automatic.
Telephone system, Selective party-line,
and a second sec
Time recorder C. H. Koerber Tire-repairing device. E. A. Holcomb Tire, Spring. V. A. Marsh
Timber-impregnating apparatus. S. Willner Time recorder. C. H. Koerber Tire-repairing device. E. A. Holcomb Tire, Spring. V. A. Marsh Tire support. A. C. Hayden Tire tightener. R. B. Smith Toaster. F. E. Hoffman Tool, Combination. J. Middleton Tools, Centering and driving means for S. H. Cox
Tooth, ArtificialS. H. Cox Tooth, ArtificialF. Z. Hanscom Tooth crownC. E. Coleman Torch
Toy, Musical. E. J. Rich Toy or puzzle, Scientifie. W. C. Jeans et al. Toy-railway rail. M. Caruso Toy-railway rail.
Tools, Centering and driving means for S. H. Cox Tooth, Artificial
Transfer-tube system. J. F. Skirrow et al. Transportation, Equalizer for wire-rope A. Horner
Trolley for electric cars. A. Del Valle Trolley head. E. E. Duff Trolley pole. P. Schnell Trolley wheel E. K. Harris
Trolley head. E. E. Duff Trolley pole. P. Schnell Trolley wheel. E. K. Harris Truck C. E. M. Miller Truck for harvesters and binders, Tongue (Reissue). J. Flaig Trnnk C. Billburg Turbine C. E. Hicks Turbine blade G. Westinghouse Typewriter clamp. F. Roberts Typewriting-machine carriage. O. C. Kavle Umbrella attachment. G. D. Corey Vacuum sweeper. F. J. Quist et al Valise-locking device. D. Stamey Valve. B. F. Silliman Valve. W. S. Fairhurst Valve. J. Nolan Valve. G. Schuster
Turbine
Umbrella attachment G. D. Corey Vacuum sweeper F. J. Quist et al Valise-locking device D. Stamey Yalve B. F. Silliman
Valve. W. S. Fairhurst Valve. J. Nolan Valve. G. Schuster Valve. J. H. Hulings
Valve. G. Schuster Valve. J. H. Hulings Valve-coutrolled device for drawing liquids G. A. Robinson Valve Engine R. Wintzer Valve gear J. G. Blunt Valve gear and ignition mechanism.
Valve gear for fluid-pressure motors
Valve regulator
colors with a coat of E. Oeser Yault, Rurial J. C. Simpson
Vehicle, MotorV. Link Vehicle, Power dumpingN. H. Nelson Vehicle wheelB. W. Hammond
Vault head W. B. White Vehicle C. H. Washburne Vehicle, Motor V. Link Vehicle, Power dumping N. H. Nelson Vehicle wheel B. W. Hammond Vehicle wheel O. Treier Vehicles, Portable testing device for mcchanically-propelled F. I. Spellman Veil, Automobile J. V. Siegel Ventilating system J. C. Stroll Vibratory apparatus for car treatment
Ventilating system. J. C. Stroh Vibratory apparatus for car treatment E. Meyer Vise, Fluid-pressure-actuated. J. E. Osmer Vise, Swivel-base. E. M. Walker Wagon-loading device. W. W. Lucas Wagon rack, Adjustable. A. E. Sutherland
Wagon-loading deviceE. M. Walker Wagon rack, AdjustableA. E. Sutherland

Walking rakeW. F. and J. C. Bohling Warp stop mechanismJ. K. Lanning Washing machineD. Hawley Water-closet hinge connectionJ. H. Pryor Water crib or caissonF. P. Fensky Water-level regulator and indicator
Water-tight coupling. W. J. Donnelley Weighing machine. P. J. A. Stockmann Well packer. W. Hemme Wheel attachment. I. R. Thompson Winding machine, Cop. E. H. Ryon Window. A. Wolff Window construction. J. Robertson Window frame, Sectional metallic.
Window operating and locking mechanism F. Karsitz Wing earrier W. F. Brown Wire twisting and weaving machine J. Cevasco et al. Wired edges, Machine for making II. Gausslen II. Gausslen
Wrench

Lamp casing......W. H. Gardiner Pictures, mirrors, or similar articles, Frame for.....J. R. Foster

Issued November 29, 1910.

MECHANICAL PATENTS. Abdominal supporter and catamenial sack, Combined......R. H. and M. L. Keagy Acid, Amid of B-B-diethylpropionic...... temperature......A. Goldstein et al. Alarm system, Electrical thermostatic..... Boiler Jurnace, Steam. F. Dully
Boot and shoe protector. C. B. Reese
Bottle stopper. G. Colucci
Box coustruction, Folding. D. J. Rex
Box-lid holder. M. Davidson
Brake device, Magnetic. J. N. Mahoney et al.
Brake mechanism, Car. W. H. Durant
Brake mechanism for car trucks. H. W. Blake
Brake mechanisms, Automatic pressurecontrolling device for. H. Rowntree
Bread or other commodity catching device
G. Mneller
Bristle-redeeming machine. E. Vogel
Bristles, Redeeming. E. Vogel
Brooder, Poultry. C. L. Cambridge
Brush Air. T. A. De Vilbiss
Brush holder. F. W. Reeves
Brnshes and the like, Manufacture of flexible tubes for fountain paint. G. Meyer
Buttors separator. W. B. Spencer
Buttons and button fasteners and coupling note tubes for fountain paint. G. Meyer
Butter separator. ... W. B. Spencer
Buttons and button fasteners and coupling
mechanism. Feed tube for. G. E. Parker
Cabinet, Combination egg. W. H. Dear
Cable-carrier apparatus. ... J. T. Cowley
Calculating machines, &c., Full-stroke
mechanism for. ... W. W. Hopkins
Can spout. Powder. ... J. R. Hughes
Candlestick, Miner's. ... G. Freeland
Candy-pulling machine. H. S. Brewington
Cane stripper and topper, Sugar.

F. M. Coekrell, Jr.
Cant dog. ... F. A. Cloudy
Car brake, Emergeney street. ...

La Gutmann
Car construction. F. W. C. Schniewind
Car coupling. ... H. C. Crigger
Car-door guide and guard. M. L. Cotter
Car equilizing mechanism ... H. W. Blake
Car gate. ... J. W. Russey
Car, Passenger. ... C. H. Anderson

Car-platform door and step guard.. Carbureter. J. N. Petersen et al.
Carbureter B. Rebourg
Carbureter P. M. Blom
Carbureters, Triple auxiliary air valve for
V. H. Donnelly et al.
Carbureting apparatus C. M. Kemp
Cards, Playing F. G. McPherson
Carpet stretcher W. H. Metcalfe
Cash and package carrier H. M. Weaver
Cash-registering, change-making and reconding and accounting machine. Chain or chain link. J. Williams Cherry picker. W. N. Bryers Chimney cap. E. J. Coehran Churn. J. E. Dinwiddie Cherry picker. ... W. N. Bryers Chimney cap. ... E. J. Cochran Churn. ... J. E. Dinwiddie Churn-operating motor, Mechanical. S. F. Dykes Chute, Intercepting. W. W. and J. C. Dorscy Cigarette-tipping machine. ... G. B. Hutton Circnit opener. ... C. C. Badeau Clay and sand screen ... A. W. Holl Clock, Alarm. ... W. J. Larkin Cock for air brakes. ... H. H. Westinghouse Coke, &c., Apparatus for handling. ... W. C. Mitchell Coke oven and door therefor (2 pats.)... F. W. C. Schniewind Coke oven and heating arrangement therefor ... F. W. C. Schniewind Coke-oven burner. ... F. W. C. Schniewind Coke-oven-discharging apparatus ... F. W. C. Schniewind Coke oven, Regenerative ... E. Wagener Collars Spacing device for use with turned-down ... C. J. Kintner Color sereen ... H. E. Merwin Combination lock ... H. E. Merwin Concrete piling, Method of and sectional Concentrating apparatus....J. Matter
Concrete piling. Method of and sectional
core for making....J. F. D. Withrow
Concrete structures, Apparatns for erecting
P. Weber
Controller handles, Locking mechanism for Controller handles, Locking mechanism for

A. S. Cubitt
Conveyer. C. D. Seeberger
Conveyer, Chain. T. A. Coleman
Couveyers and receptacles, Connecting
coupling for extensible. W. Lennon
Cooking or heating utensil. M. Stransky
Corn husker. T. I. Ludwig
Corset clasp. E. B. Howland
Cotton chopper and cultivator, Combined.

J. R. Stovall
Cotton-chopper attachment. H. S. Berry
Cotton gin. W. W. James
Cotton-picking machine. J. F. Appleby
Crank, Extension. A. C. Zierath
Crate, Collapsible. H. B. Walter
Crushing mill. T. J. Sturtevant
Cultivator. E. M. Dowdy
Cultivator. E. Gieselmann
Cultivator. B. L. Nehf
Cultivator replanter attachment.

E. E. Marklay Delivery machine.....J. M. Beavo
Discharge and overflow fitting..G. Helbling Discharge and overflow fitting. G. Helbling Disinfecting apparatus.

P. C. F. and C. S. Effantin Disinfector and deodorizer.

J., W. H. and E. R. Williams Display box.

E. H. Heppe Display cabinet.

A. T. Dunean Display card.

R. Gair Display cover for barrels.

S. H. Klein Display device.

B. W. Norton Display rack and silent salesman.

H. Barnett Displayer, Portable fruit. W. F. Crandall Ditching tool.

W. W. Wolary Door and step operating mechanism, Combined.

H. Rowntree Door for silos. F. J. Vall Cott Door, Grain. E. Posson Door holder. C. T. Rogers Door-moving mechanism. H. Rowntree Door securer (2 pats.) E. R. Fuels Door-securing device. E. K. Fuchs Draft device. E. M. Dowdy Drawers, Supporting and guiding device for formittee. furniture. W. F. Wagner
Drill attachment. R. A. Brown et al.
Drills, Tool-dropping apparatus for.

H. Kirk
Drop box, Coin-operated. S. J. Kelly
Drum, Friction. J. V. Beekman
Drying apparatus. S. Wiebe
Drying roll. J. A. Lamp et al.
Egg-drying apparatus. H. E. Coffin
Electric contact shoe. C. C. Rich
Electric drop-card adjuster. W. S. Hull
Electric drop-card adjuster. W. S. Hull
Electric heater, Radiant.

R. W. Baker et al.
Electric-lighting system for railway and
other carriages, Voltage-regulated.

J. Dalziel
Electric machine, Dynamo. W. H. Powell
Electric switch. D. L. Sibole
Electrical distribution system

A. S. Hubbard
Electrical element. A. T. K. Estelle
Electrical equalizing system. R. Riehter Electrical equalizing system.....R. Richter

Eyeglasses. L. F. Adt
Faucet gage, Cask. J. C. Newman
Feed regulator. C. E. Warner
Fence (Reissue). L. S. Lachman
Fence-attaching means for posts, Wire.
L. A. Henning
Fence-wire fastening. J. G. Hall
Filing apparatus. W. T. Grady
Fire escape. L. H. Firestone
Filter. G. Fleming Fire escape.

Filter.

G. Fleming
Filter.

G. Fleming
Filter, Water

Fire escape.

L. H. Firestone
Fireplace fender.

Fireplace fender.

S. B. Hays
Firing-timing device.

F. G. Affleck
Flanged fitting end.

L. F. Osborne
Flue cleaners, Device for handling.

M. O. Lewis
Fluid-heating device.

C. M. Rice
Fluid-pressure motor and controlling mechanism therefor.

W. H. Cahall
Flushing apparatus.

W. Gnyton
Folding box and crate.

J. Biro
Folding enp, Flexible.

A. G. Brandt
Frames of every description, &e., Foundation for.

A. von Rugen
Fruit conveyer.

H. Hammond
Fuel mixer.

A. Schmidt Fuel mixer. A. Schmidt
Fumigator. O. Immermann
W. F. Crane Fumigator. O. Immermann Funnel. W. E. Crane Funnel. J. Mathis Furnace. B. L. Worthen Furrow opener, Disk. T. Brennan, Jr. Gage. F. Turek Game apparatus, Baseball. A. W. Weeden Game, Card. N. M. Hopkins Garment supporter. E. N. Humphrey Gas and oil burner, Combination. G. A. Smith Gas fitting W. Corbridge Gearing. J. H. Malley Glass, Apparatus for transporting and manipulating sheets of plate. L. De Bay Gearing. J. H. Malley
Glass, Apparatus for transporting and manipulating sheets of plate. L. De Bay
Governing apparatus. H. L. Barton
Governing mechanism for fluid-pressure engines. H. H. Dow
Grain-decorticating machine.

R. E. Kimball
Grass entter. A. Euchenhofer
Grease gun. G. W. Stone, Jr.
Grinding and polishing machine.

F. Hayden
Grinding machine. H. B. Nichols
Grinding machine. H. B. Nichols
Grinding wheel. H. B. Nichols
Grinding wheel. H. B. Nichols
Guy wires, Take-up device for

E. C. Gillespie
Hammer, Power. C. R. Embry
Harrow, Disk. W. C. King
Harvester, Corn. J. Rickel
Harvesting machine. D. J. Brower
Hatch fastener. L. W. Young
Heating receptacle, Electric. W. Stanley
Hides and skins, Machine for preparing.

L. Richter
Hinge. W. H. Fromhart
Horse-cleaning implement. B. Lobee
Horses, Electric appliance for

J. P. Sanborn
Hose supporter. E. D. Lowry
Hydrocarbon burner. W. M. Green
Ice-cream spoon. J. Geier
Ice scraper. G. B. Miller Ice-cream spoon. J. Geier Ice scraper. G. B. Miller Illusory dramatie effects, Apparatus for producing. T. R. Barrett Initiation device. E. De Moulin Insulating hanger. N. J. Bigham Internal-combustion engine.

Internal-combustion engine. E. Easthope, Jr. Invalid-lifting apparatus. G. White Ironing table. A. J. Foster Jar wrench, Fruit. L. J. Graffort et al. Key extractor. J. Kopietz Key ring. J. A. Prigge, Jr. Kilns, Fuel burner for cement.

M. F. Mangelsdorff Kitchen utensil. O. C. Berchtold Knitting machines, Casting-off bur for circular. Lacing-hook-setting machine. Ice-cream spoon......J. Geier Ice scraper.....G. B. Miller turret......J. G. Oliver Leather-wringing machine. R. F. Whitney Lever.....C. A. Murphy Line setting and easting machine.....H. Degener Liquid-dispensing device....J. Mandelberg

Linotype machines, Spacehand buffer for	`. •
Linotype machines, Spacehand buffer for	in
Liquid-fuel burner. J. C. McQuerry et a Liquid shaker	al. en
Liquids, Apparatus for storage and deli ery of inflammable	rf
collecting solids from J. E. Rothwelleck V. G. M. Er	ell as
Lock F. Kul Lock J. A. Freme	ha on
Locomotive-boiler superheater	an all
Looms, False reed forJ. C. Kaemf Looms, Stop-motion device for automat	er
reshuttling. J. Rostr. Lubrication system. C. A. J. Alhe Muching wrench E. T. Lag	on rt 3d
Lock. J. A. Freme Lock. J. W. Stephe Loom jacquard mechanism. W. Pears: Looms, False reed for. J. C. Kaemf Looms. Stop-motion device for automat reshuttling. J. Rostr. Lubrication system. C. A. J. Alhe Machine wrench. E. T. Lac Manure distributer, Chemical. L. Frenn Mashing process. A. J. M. Lascl Massage vibrator. A. E. Ell Master plates. Making H. McPh	et he
Massage vibratorA. E. Ell Master plates. MakingH. McPh Massaging current in three-place system	lis ee
Means for	er es
Mechanical movement (2 pats.)	ds or
Massage vibrator	ZC
Metal-clenching machineH. C. Ferguse Metals. Composition of matter to be us	on on ed
for the purpose of fluxing. M. P. Jewe Mining drill, Water-powerC. A. Hans	tt
Metals, Composition of matter to be use for the purpose of fluxing. M. P. Jewe Mining drill. Water-power C. A. Hanso Mining needle P. F. Costel Molding apparatus F. H. Tidnam et a Mop and scrubbing brush, Combined J. O. Beazle Mosquito-bar frame, Folding E. Tyn Motion-transmitting device J. F. Pagendar Mouthpiece tubes, Apparatus for making J. C. Mull Mower, Lawn R. E. Hedg Music holder C. G. Peters Music-sheet rolls for mechanical piano-pla ers. Automatically-adjustable spool f	lo il.
Mosquito-bar frame, FoldingE. Tyn	ev er
Motion-transmitting device	ni
Mower, Lawn R. E. Hedg	er es
Music holder	or.
perforated	er or
Nipple cover W. F. Bay	er ey
Nut, Lock. N. F. Chamberl Nut, lock H. A. Luck	in ck
Music-sheet rolls for mechanical piano-pla ers. Automatically-adjustable spool f perforated H. G. Mill Musical instruments, Pneumatic action f W. F. Bay Nipple cover C. W. Ladle Nut axle J. B. Wism Nut, Lock N. F. Chamberl Nut lock N. F. Chamberl Nut lock O. Salisbu Nut-making machine J. S. Hortma Oil and gas mixtures. Combustion of	ry nn
Oil break switchH. J. Hunsick	m er
Nut-making machine. J. S. Hortma Oil and gas mixtures, Combustion of	ns nl.
Ores, Treatment of C. M. Johnsoven, Baking S. Turn	on er
Oven shelfJ. E. Michaud et a	ad al.
Padlock F Sole Panel hoard R H Olle	5.Z 5.Z
Paper-drying apparatus	nn n
Paper-making-machine drying cylinder	on
Paper, Manufacture of wallA. Tro	ge Og It-
ter from . M. H. Hubhar Pasteurizier . W. J. McK.	rd ee
Combined S. Shapi Pen. Self-filling fountain T. F. Gayne	ro
Pencil. ModelingT. A. De Vilhi Photographic-printing machine	SS
Paper-making-machine drying cylinder Paper, Manufacture of wall	ns
Pipe-cleaning apparatus	ei id
Pipe-cleaning apparatus. Gas	er
from drain and otherW. Haddoo Plant-thinning machineJ. W. Brised	k
Planter, CornA. H. Leatherma Planter teusion device. Check-row E. W. Ryde Player, AutomaticW. R. Crippe	in
Pneumatic-despatch-tube apparatusJ. G. Maclare Pneumatic-despatch-tube apparatus carrie	211 21
Pneumatic separator	er
Pole and shafts, Combined carriageE. J. Holme	
Pole and sharts, Combined catriage E. J. Holm Pole or posts, Base for	tt
Printer's rule in corner, straight-stri	ir p.
curved, or tubular form., W. C. F. Papl Printing-plate-casting mechanism. Stere type	ce o- od
Printing-press inking device. D. W. Custo Propeller for operating on finids	er
Printing-press inking device. D. W. Custer Propeller for operating on finids	er h
Pulley, Friction clutchA. S. Anderso Pulp machineryJ. H. Wallac	011 0e
Pump, Centrifugal. F. W. Krog Pump, Force. F. H. Richard	cli Is
Pump. Power tire H. D. Waterhous Pump. Vacuum A. H. Squie	er er
Punching machine	ss st
RadiatorJ. J. Lawle	er

	=
Radiators, Adjustable ventilating connection forL. A. Girvin	
tion for. L. A. Girvin Rail bond. C. R. Sturdevant Rail fastening. O. Payzant	
Rail joint H. A. Christy Rail joint C. Lakosky Rail joint O. Payzant	
Rail bond. C. R. Sturdevant Rail fastening. O. Payzant Rail joint. H. A. Christy Rail joint. C. Lakosky Rail joint. O. Payzant Rail joint. G. W. Rohbins Rail joint. A. Daly Railway crossing. L. Alexander Railway gate. R. P. Williams Railway gate. W. E. Geddes Railway rail joint. S. Ferris Railway rail joint. S. Ferris Railway-switch safety-lock. J. R. McKinnis Railway tie. Metallic. W. D. Forsyth Rat trap. W. S. Ward Ratchet drill. F. E. Farley Razor, Safety. O. Kampfe Razor strop. E. Hunold	
Railway crossing. L. Alexander Railway, Electric. R. P. Williams	
Railway rail jointS. Ferris Railway-switch safety-lockJ. R. McKinnis	
Railway tie. Metallic W. D. Forsyth Rat trap W. S. Ward	
Ratchet drill. F. E. Farley Razor, Safety. O. Kampfe	
Razor strop. E. Hunold Receptacle washer and polisher. J. N. Graves Refractory material, Manufacturing. G. C., G. E. and A. W. Fludder	
Refractory material, ManufacturingG. C., G. E. and A. W. Fludder	
Rifrigerating car L. H. Lister Refrigerator F. C. Schmidt Reinforcing frames, Fitting for G. M. Graham Relay R. H. Manson Resilient wheel L. F. Delaney Retard device F. J. W. Weiser Retting process by pectic aerobic microbes in a gas current, Industrial microbiological vegetal G. Rossi Reversing mechanism, Fluid-operated rotary-movement G. A. Fowler Riveting machine F. Thompson Robe, Automobile J. P. Gordon Rock drill S. W. Brothers Rope and chain clamp J. S. Sourek Rope, chain, or wire stretcher J. S. Sourek Rotary engine J. Putman Rotary engine H. A. Massey	
Relay R. H. Manson Resilient wheel L. F. Delaney	
Retard deviceF. J. W. Weiser Retting process by pectic aerobic microbes	
cal vegetal	
tary-movement. G. A. Fowler Riveting machine. F. Thompson	
Rock drillS. W. Brothers Rock and chain clamp J. S. Sourek	
Rope, chain, or wire stretcher. J. S. Sourck Rotary engine. J. Putman	
Rotary engine. H. A. Massey Sad-iron heater. W. H. Van Horn	
Sash-cord fastener	
Sash, Window. E. M. Matthews Saw attachment. C. W. Newton	
Saw, Drag. M. L. Maxwell Saw jointer. A. Stecker Saw rool W. Wakley	
Saw trimmer, Rotary F. W. Albrecht Sealing machine, Carton W. A. Joplin	
Seals to packing cases, Means for attaching	
Rotary engine	
Sewing-machine binding mechanism	
Shade-making machine, Window	
Sharpening device for lawn mowers P. D. Barber et al.	
Shoe cleanerC. K. Haw et al.	
Siding, Making,, T. J. House Sign, Electric street-indicating, J. W. Ellis	
Sign holderW. H. Sweatt Signaling system. ElectricalC. H. Pool	
C P Paymann of al	
Skid. A. Lemke Skinning and splitting eattle and scribing hogs, Machine for. J. Lance et al. Skirt shield, Sanitary. S. W. Little Sled. Motor. M. Myerson Slugs or fastenings in stock, Machine for	
Skirt shield, Sanitary. S. W. Little Sled, Motor M. Myerson	
inserting	
Suow-melting machine W. N. Lux Sole and heel plate J. T. Clishum Spectacles. Bridge connection for lenses for J. Savo'e Speed machine, Variable. R. E. Rosewarne Spiral separator F. H. Blatch Spiral separator F. H. Pardee	
Speed machine, Variable, R. E. Rosewarne Spinning machine, Cap. P. J. Moroney	
Spiral separator. F. H. Blatch Spiral separator. F. Pardee	
Spiral separator. F. Pardee Spittoon. J. B. Pate Spring-attaching clip. L. A. Young Spring wheel. Z. A. and R. D. Bruegger Sprinkler alarm and indicator. Automatics	
Sprinkler alarm and indicator, Automatic F. W. Milliken	
F. W. Milliken Stalk cutter. J. R. Weatherly Stallion sh'eld. G. M. Frampton Stamp, Addressing. T. Dillard	
Stamp. Addressing L. R. Garby Stamps and labels. Machine for affixing	
C. J. Fancher et al. Stanchion. Cattle. J. B. Forwood	
Stamp. Addressing	
Stove or furnace grate W. Clerkin Straightening and hardening apparatus	
Stove and range construction J. P. McDonough Stove or furnace grate	
Snrgical ligatures and other purposes, Cord for	
Swing A. W. Lyda Switch box G. Gut	
Telegraph system	
Telephone and service system, Combined H. G. Webster	
Talegraph system	
Threading device, Left-hand	
Thread-setecting device	
Tire clamp. B. Morgan	

Tohacco moistener
Tobacco pipeJ. B. McLaughlin Tobacco pipeH. F. Schulte
Toilet utensil B. Reynolds Towing machine E. Dalgleish Towing machine F. Metcalf et al
Towing machineF. Metcalf et al Tracks. Making slotted tubular.
Tracks, Making slotted tubular. R. Minshull Traffic system. Street. E. E. Sirrine Tramway point. R. A. Hadfield Transom lifter, &c. A. Frombold
Tramway pointR. A. Hadfield
Transportation systemW. C. Carr
Tray, Folding. J. C. Toynbee
Trolley guard
Trolley poleR. F. Robinson et al.
Trombone-locking deviceH. C. Martin
Truck, Car
Truck ElectricA. F. Batchelder Truck frameW. D. Lowry
Trunk, chest, or the likeW. E. Smith TrussJ. W. Kayser
Tube-cleaning apparatus. C. Robinett et al.
Turbine blading (2 pats.)L. A. Haines
Turbine motorT. J. Loftus TweezersE. A. Stranb
Transom lifter, &c A. Frombold Transportation system. W. C. Carr Tray, Crumb. A. V. Green Tray, Crumb. A. V. Green Tray, Folding. J. C. Toynbee Trolley head. E. N. McCall Trolley pole. C. M. Speck et al. Trolley pole. R. F. Robinson et al. Trolley retriever. N. Peterson Trombone-locking device. H. C. Martin Trowel. A. A. Harvie Truck, Car. H. W. Blake Truck Electric. A. F. Batchelder Truck frame. W. D. Lowry Trunk, chest, or the like. W. E. Smith Truss. J. W. Kayser Tube-bending machine. R. Kieserling, Sr. Tube-cleaning apparatus. C. Robinett et al. Tuhe-cleaning apparatus. H. E. Weinland Turbine blading (2 pats.) L. A. Haines Turbine motor. T. J. Loftus Tweezers. E. A. Straub Type and type bars, Mechanism for mak- ing. F. H. Richards
Type case. Supplementary, M. A. Stern Typewriter-ribbon-reversing mechanism.
AutomaticT. E. Buschmann Typewriting machineH. N. Josleyn
Typewriting machineA. G. F. Knrowski Typewriting machines, &c., Time-control-
ling mechanism forC. D. Rice et al. Typewriting machines. Type bar bearing
forE. G. Latta et al. Typographic formF. H. Richards
Vacuum dust removerC. B. Foster et al. ValveT. F. Payne
Type and type bars. Mechanism for making. F. H. Richards Type case. Supplementary. M. A. Stern Typewriter-ribbon-reversing mechanism. Automatic. T. E. Buschmann Typewriting machine. H. N. Josleyn Typewriting machine. A. G. F. Knrowski Typewriting machines, &c., Time-controlling mechanism for. C. D. Rice et al. Typewriting machines. Type bar bearing for. E. G. Latta et al. Typographic form. F. H. Richards Vacuum dust remover. C. B. Foster et al. Valve. T. F. Payne Valve. H. Lippoid Valve fitting. J. F. Bernstein Valve grinder and drill. Combiued. O. R. Angell
Valve grinder and drill. CombinedO. R. Angell
Valve remover
Vehicle brake (Reissue)
Vehicle wheel
Vehicle wheel, Cushion-tread. H. C. Brown
Vehicle wind shieldC. O. Doan Veneer-package machineH. Roberts
Voting, Device for independent
Vulcanizers, Quick-opening door for
Wagon brake J. L. Tomer Wall set A. H. Weiss Wall socket G. W. Goodridge
Wall socketG. W. Goodridge Warning apparatus, Automatic trembler particularly applicable toE. Teste
wash bowl and basin trapA. McIntosh
Wash bowl and basin trapA. McIntosh Watch movement (2 pats.)W. B. Mehl Watch-movement ratchet mechanism
\\ H Fhelhare
Water and air proof composition of matter H. Mielck et al. Water gage
Water motor
Water motor. H. W. Yost Water motor. H. F. Blackwell Watering trough B. Hasman, Jr.
Wave motor. B. Cutler Weaner, Calf. J. S. Weathers Weighing and filling machine. H. Dunkerly
Weighing apparatus, Automatic
Wheel lock. Bicycle or other. B. Schestopol
wheels, Detachable and sectional rim for vehicleJ. W. Miller
Whistle, Automatic warning, T. E. Kinney
Wheels, Detachable and sectional rim for vehicle. J. W. Miller Wheelbarrow. H. M. Verplank Whistle, Automatic warning. T. E. Kinney Winding apparatus. M. Leitch Window bracket. J. N. Parrahm

Window tent
Window ventilator A. A. Mathes n
Wire clamp
Wire cord, Spring grip holder for
C. L. Glynn
Wire grip
Wire netting, Machine for weaving
Writing machine for the use of the blind.
A. Swindler

DESIGNS.

Carpet W. A. Elliot Carpet W. A. Spring Centrifugal-machine frame M. L. Hoyt Chair L. Killian Cleaning apparatus, Casing for portable suction I. K. Baxter et al. Dolly R. Gair Doll D. T. Hails Drinking vessel A. Gredelus Emblem J. W. Lane Glass vessel or similar article.
T. G. Hawkes Hat and coat hangerD. F. Buchmeller et al.
Jar. D. C. Riplev et al Knife handle, Pocket . R. C. vein Cleff Lace. Levers . C. W. Birkin Lamp . N. Blount Lamp shade . H. A. Schrelb, cl. Mat. A. Hendersch Mirrors, pictures, or similar articles, Frame for . J. R. Fester Spoon, fork, or similar article. G. Strobhaker
Table decoration, ElectricJ. Germin Talking-machine cabinetJ. C. English Unitary chair and tableE. Hick

Drawings for Inventors.

If you want copies of the drawings of your patent, we can procure them at these prices: If your patent contains two or three sheets the prices are doubled or trebled.

2.5	copies,					(SX15)	\$ 2.50
50	4.6	6.0		"	4.4	16	3.50
100	6.5	1.6	6.6		6.6	6.6	5.50
500	• 6	6.4	"		**	* 6	7.00
1000	4.6	6.6	6.6	*4	14	16	9.00

					1037 577	
copies	each	sheet,	reduce	d 1/3	(8% x5%)	\$1.75
	6.0	4.6		6.0	* 6	2.50
11		11	* 6	6.0	(4	3.00
	6.6	6.0	6.0	6.6	44	5.00
"	4.6	16	+ 4	* *	6.6	6.50
	"	(1 (1	(1 (1 (1	t, t, t, t, t,		(1) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4

These copies will be made by the photo-lithographic process, by the firm which formerly attended to the Patent Office work, and will be equally as good as the drawings accompanying your letters patent. Five hundred copies of your patent would cost you at least \$25. We can furnish 500 copies of the drawings, if contained on one sheet, for \$7.00 full size, or \$5.00, if reduced one-third, the same reduction as your letters-patent drawings. Your orders solicited.

The Inventive Age Publishing Company, WASHINGTON, D. C. .

PATEN

Send Your Business Direct to Washington Saves Time and Insures Better Service.

Trade Marks, Copyrights and Designs.

My office is close to the U.S. Patent Office. Personal attention given-OVER THIRTY YEARS PRACTICE. Book "How to Obtain Patents." etc., sent free. Patents procured through E. G. Siggers receive special notice, without charge, in the—

INVENTIVE AGE

Illustrated Monthly-Twenty-third Year, Terms, \$1.00 a Year.

E. G. SIGGERS, 918 F STREET, N. W., WASHINGTON. D.

WASHINGTON, D. C.

An Irresistible Bargain

\$1.75 Value for Only \$1.15

S1.15

One Year's Subscription for McCall's Magazine, Any 15-Cent McCall Pattern you may select, One Year's Subscription for the Inventive Age

McCall's Magazine

Is a large, artistic, handsomely illustrated hundred-page monthly magazine. It contains sixty new Fashion Designs in each issue. Every woman needs it for its up-to-date fashions, entertaining stories and complete information on all home and personal topics. Over one million subscribers. Acknowledged the best Home and Fashion Magazine. Regular price, 5 cents a copy. Worth double.



McCall Patterns

So simple you cannot misunderstand them. Absolutely accurate. In style, irreproachable. You may select, free, any McCall Pattern you desire from the first number of the magazine which reaches you. Regular price, 15 cents.

The Inventive Age.

A journal of manufacturing industry and scientific progress. The indispensable paper for patentees. Contains matter and information not found elsewhere. Regular price, \$1.00 per year.

DON'T MISS THIS EXTRAORDINARY OFFER. Address: THE INVENTIVE AGE Publishing Co., Washington, D. C.

The DIAMOND

SELF-FILLING AND SELF-CLEANING Fountain Pen.

OF ANY OTHER PEN
MANUFACTURED BECAUSE OF ITS SELFFILLING AND SELF
CLEANING FEATURES





Including one year's subscription to "The Inventive Age."

Price \$2.00.

No Lost Time.

No Solled Fingers.

Address

INVENTIVE AGE PUB'L. COMPANY, WASHINGTON, D. C.

HENLEY'S TWENTIETH CENTURY BOOK OF

Recipes, Formulas & Processes



Edited by GARDNER, D. HISCOX, M. E.

Price, \$3.00 Cloth Binding

\$4.00 Half Morocco Binding

800 large Octavo (6 x 9½) Pages.

Contains over 10,000 Selected Scientific, Chemical, fechnological, and Practical Recipes and Processes, Including Hundreds of so-called Trade Secrets for every business.

This is THE BOOK everyone should have at his command who seeks FRACTICAL, ACCURATE KNOWLEDGE and GUIDANCE in his every-day work, as no book has ever been published which so fully meets the multifarious requirements of the factory, the workshop, the laboratory, and the household. In preparing the work for so exacting and numerous a class of readers the Editor has exerted every effort to present only information which is practical, accurate and modern.

Address

INVENTIVE AGE PUB'L. COMPANY WASHINGTON, D. C.

SEND FOR OUR FREE CATALOGUE OF BOOKS FOR INVENTORS AND MECHANICS.

Address: THE INVENTIVE AGE PUBL'G CO., 918 F St., Washington, D. C.



Vol. XXIII. No. 4. }

Washington, D. C.—April 1, 1911.

SINGLE COPIES 10 CENTA ONE DOLLAR A YEAR.

MILITARY WIRELESS TELEGRAPHY IN GERMANY.

By Frank C. Perkins.

THE construction and arrangement of a most interesting form of portable wireless telegraph for use in army service is shown in the accompanying illustrations Figs. 1 and 2. For supporting the antennæ, a pole of magnolium is provided with a complete receiving and transmitting equipment, including a folding field table and chair, and a dynamo driven by a bicycle arrangement, with treadle

For use as counter poises, six wires of phosphor bronze are utilized, which are tightened on wooden poles about three feet in height and insulated from the pole and bronze.

In installing this portable military station, the wireless telegraph antennæ are first fastened to the top part of the pole with conductor connections and three insulating wire ropes for reinforcing, and then the re-

box. A set of dry batteries with sliding resistance, a head telephone, and an electrolytic detector form the acoustical apparatus of the receiving station, a stationary plate condenser

It is stated that the portable military station has a range of about 10 miles on the level, and ten men can erect the pole, making the necessary connections of the counterpoise and

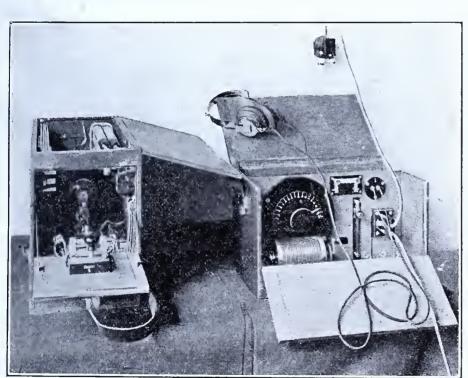


FIG. 1.—TRANSMITTING APPARATUS.

sprocket and gear which supplies the maining portions of the pole are connecessary current.

The pole, which is between 50 and 60 feet in length, is made up of six foot sections, eight in number, a half dozen steel wire ropes being utilized for steadying the pole at the top and reinforcing it at its middle portion, while antennæ wires of phosphor bronze about 80 feet in length are provided, being carried from the top of the pole at an angle of 60 degrees, the pole supplying the electrical energy to the antennæ wires.

nected in sections, the pole being gradually raised vertically until it reaches the proper height. It is stated that the total weight of the supporting pole for the antennæ wire is only 11 pounds, and it can be erected by one man, a half dozen others being required, however, in installing the same, one man handling each of the steel wire ropes for reinforcing the

The receiving apparatus is of the portable type, mounted in a small



FIG. 2.—WIRELESS RECEIVING APPARATUS.

being connected parallel to the cell. A variable roller condenser is used for regulating the vibration of the antennæ with the counterpoise. The receiving outfit, which only weighs 13 pounds, is easily transported, being mounted in a leather trunk.

antennæ, placing the transmitting and receiving apparatus in readiness for operation in 30 minutes. These portable military wireless telegraph stations can be operated by two men, one for driving the treadle dynamo, and the other for operating, while

eight men can transport the entire telegraph station without difficulty. The treadle dynamo, of the continuous current type, is mounted on a cycle frame and driven by a belt transmission. The total weight of the dynamo is 16 pounds and it supplies the necessary 60 watts for use in the transmitting apparatus, this small amount of energy being easily supplied by one man working the treadle.

The sending station equipment is mounted on a light wooden box. The apparatus used includes a Morse key, with hinges, and a plate condenser to avoid sparking on the hammer interrupter of the induction coil. There is also provided a self-inductive coil including rubber insulated wire, a Leyden jar, spark gap and self-induction for the closed vibration circuit, while a plug connection is arranged for the antennæ and counterpoise and another for the primary current. A coil is also placed in the box to regulate the characteristic vibration of the antenna.

Growing Pearls to Order.

The pearl is the latest product to be cultivated on a commercial scale. A plant is being operated in the gulf of lower California, under a concession from the Mexican government, and the business is said to be highly successful. More than a thousand people are employed, and the output is large. Markets are found in all the great cities of the world for mother of pearl, which is shipped in growing quantities. Two years, it is stated, are needed for the growth of an ordinary shell, which forms in layers like an onion. If too great a time is allowed to elapse, the shell loses its value, and it is partly the discovery of this fact which has made possible the business as now carried on. The shells are gathered in the egg depositing season. The eggs are placed in artificial channels, made in imitation of the natural bottom of the sea, with proper protection from the natural enemies. Proper transplanting as the eggs develop and the replacing of dead with live shells, results in a plentiful growth. And when the pearls have developed, divers descend and secure them in protected waters without risk. Black, white and yellowish pearls are among the output; the black being most valuable, or worth about \$300 per carat, and the white about \$250 per carat. These prices, of course, are only for the most perfect pearls.

How to Get Copies of Patents.

THE INVENTIVE AGE prints each month a list of the patents granted by the Patent Office. This list includes the name of the inventor, the title of the invention and the date of the patent. Anyone can procure through THE INVENTIVE AGE a copy of any patent included in the list, by giving the data and enclosing ten cents in stamps for each copy. There is no better way of keeping yourself informed about the progress of the arts than by scanning the list each month and ordering copies of patents.

THE INVENTORS' GUILD.

To one whose knowledge of patents is confined to reading the literature of some patent attorneys, the impression is apt to be conveyed that the path of the inventor is one strewn with roses and dollar bills. Such an impression, however, does not last long. It usually ends by the inventor obtaining his patent and having an opportunity a year or so later to count up his losses. That the conditions within the Patent Office and patent practice before the courts call for remedial action, and that the path of the inventors is strewn with somethorns and other kinds of bills is the knowledge that inventors possess who have had more than one patent issued to them.

One of the most unsatisfactory conditions within the Patent Office is the difficulty of making an intelligent and careful search to determine the patentability of an invention, or to investigate the scope and validity of a patent after one has been issued on the invention. These examinations have to be made through portfolios of the patent drawings, and the examination is confined to United States patents: but the examination of the Patent Office on applications for patents is not so limited. Each examining division bas in its own rooms the drawings of patents issued by the principal countries of the world. There is only one set of these foreign patent drawings, and they are retained in the Examiner's rooms. They are not for public examination. While we do not criticise the wisdom of the rule which prevents this single set of foreign patent drawings from being thrown open to public inspection, we do think that inventors and their attorneys should be given a corresponding set of foreign patent drawings from which searches may be made in the rooms set apart and known as the "Attorneys Rooms." In other words, the field of search of an attorney to determine the scope and validity of a patent, as well as the patentability of an invention, should be as extensive as the examination of the Patent Office in passing on the application for the patent.

There are other things connected with the administration of the Patent Office which demand correction, either by new legislation, or by the application of the proper administrative authority; but it is not the purpose of this article to go further into details. We believe it is conceded by everyone without the Patent Office with respect to patents are not satisfactory. American inventors have for years felt that matters were wrong, and some of the most prominent engineers, scientific authorities and inventors of this country have formed a corporation which they have named "The Inventor's Guild."

Thomas A. Edison is one of the organization's members. Its officers are: President-Ralph D. Mershon,

consulting engineer; First Vice President-Charles W. Hunt, inventor of coal-handling machinery; Second Vice President-Charles S. Bradley, inventor of electric devices; Secretaries-Thomas Robins, inventor and manufacturer of conveying belts, and Henry L. Doherty, inventor of gas-making machinery. Peter Cooper Hewitt, who invented the mercury vapor lamp, and Prof. Michael I. Pupin of the Electrical Engineering Faculty of Columbia University, are members of the Guild's Board of Governors. Other members are Prof. Northrup of Princeton, Prof. Thomas of the University of Wisconsin, and Prof. Pierce of Harvard.

According to the constitution of the guild, its purpose is "to further the interests and secure full acknowledgment and protection for the rights of inventors; to advance the application of the useful arts and sciences, and to foster social relations among those who have made notable advances in the application of the useful arts and sciences." The guild is not permitted to indorse any commercial enterprise or to allow its name to be used for any commercial purpose. It will meet every month at a Broadway guild.

The membership is limited to fifty at present, because a larger organization would merely be unwieldly and would not accomplish so effectively the specific results desired.

The scope of the guild is national. Its present members are:

Bion J. Arnold of Chicago, Dr. Leo H. Backeland of Yonkers, W. H. Blauvelt of Syracuse, Charles S. Bradley of New York, Alexander E. Brown of Cleveland, H. L. Doherty of New York, Thomas A. Edison of Llewellyn Park, N. J.; Stephen D. Field of Stockbridge, Mass.; James Gayley of New York, Edward R. Hewitt and Peter Cooper Hewitt of New York, Charles W. Hunt of West New Brighton, Dr. John R. Kelley of Pittsfield, Mass.; T. S. C. Lowc of Los Angeles, Ralph D. Mershon and Ambrose Monell of New York, Prof. Edwin F. Northrup of Princeton, Prof. G. W. Pierce of Cambridge, Mass.; Charles E. Pope, of Pittsburg, Prof. M. I. Pupin, Thos. Robins, Dr. F. Schneiwind, and C. H. Smoot of New York, Prof. Carl Thomas of the University of Wisconsin, F. L. O. Wadsworth of Pittsburg, Arthur West of Bethlehem, Penn.; Dr. W. E. Winship of New York, and B. F. Wood of the Pennsylvania Railroad, Altoona, Pa.

Some of the conditions which the guild will try to remedy are the delays and ineffectiveness of the United States Patent Office, the expense and tardiness of litigation, the injustice of "rich corporations" to poor inventors in delaying and prolonging that the present conditions within and suits and increasing legal expenses to a point which makes such suits prohibitive, and the disadvantages to which American inventors are subject in the patent offices of foreign countries.

The guild intends to accomplish these objects by employing competent agents and legal advisers, by appealing to all the inventors of the country, by interviewing members of Congress as to the advisability of reforms in patent laws, and, more particularly, by seeking reforms in the present ma-

chinery of the United States Patent Office. Public opinion will also be appealed to.

The guild will also investigate the condition of the laws regarding patents, so that corporations which infringe on any inventor's patent rights can no longer unduly carry a suit from court to court until the inventor's money gives out and he has to quit. As the conditions are today, the inventor knows that there is something wrong with the laws and the Patent Office. But he doesn't know what the remedies are and how he can defend himself or improve the situation. The guild intends to employ agents and investigators and consult legal authorities until they find out exactly what is wrong and exactly how to make the wrong right.

Such an organization should be of great benefit to the country in general, and to inventors in particular. The plan of having the membership limited in number is a good one, though we rather think that fifty is too small; one hundred would not be too many, though we do not believe that a large organization is desirable. Every effort should be made to exclude attorneys from membership, or any inventor who practices as an attorney, or has attempted to solicit patents either for himself or others. These inventors' protective associations have started before. We remember about a year ago an organization of this character was formed in the city of Washington with some obscure persons at the head of it. They took the newspapers into their confidence and told with much detail how they were going to reform the patent system. Nothing has been heard from them since. The difficulty about all such organizations in the past has been to prevent them from being used to exploit some particular person or his patent schemes, and the fact that this guild is not permitted to indorse any commercial enterprise, or allow its name to be used for any commercial purpose, may go far to preserve its usefulness and prolong its life. We sincerely wish it well, for we believe it has a mission to fulfill, and there is plenty of work for it to do. One of the things to which it ought to direct attention is the surplus money which the Patent Office has paid into the United States Treasury. It now amounts to between six and seven million dollars, more than sufficient to build a new Patent Office,something which has been needed for twenty years. There are some examining divisions of the Patent Office in which from six to eight men are crowded in poorly-lighted and illventilated rooms. The private offices of attorneys are palaces in comparison with the quarters and accommodations provided in some of the examining divisions. Not only that, but there are no adequate accommodations for the attorneys, and the inaccessibility of files and records hampers the work and involves great loss of time. The construction of a new Patent Office is imperatively needed. With the question of room settled, and an increase in the force of employees so as to keep the work up to date, and

classify all the patents, the United States Patent Office would be placed on a par with the patent offices of the principal countries of the world, whereas its present facilities are inferior to the patent offices of England, France and Germany. We wish the guild prosperity, and promise for it our most cordial support.

Another New York Tunnel.

Rapid transit dreamers have given credence for years to rumors that Staten Island would be connected with Manhattan by a dry passageway, and they have selected various kinds of construction and routes for this structure. A tunnel under the bay has of course been thought of, but the idea of four miles of burrowing through mud and beneath the waters of the harbor was enough to give pause to the most audacious engineer. Now, however, plans are being definitely made for the construction of a tunnel across the Narrows, from Brooklyn to Staten Island. It will be a steel and concrete tube resting on oak piles driven into the bed of the Narrows, and it is estimated that it will cost only \$100,000,000, which is less than a quarter of the amount spent on the new tunnels under the Hudson. The work, it is claimed, can be quickly and cheaply done, as it is all merely ordinary contractors' work and does not require skilled labor outside the engineering, nor does it involve the usual difficulties and loss of life in its construction. A level passage across the bottom of the Narrows will first be dredged, and along this the heavy oak piles will be driven, which will supply as solid a foundation for the tunnel to rest upon as though nature had provided bedrock.

The tube will be constructed of steel, arched and cemented and guaranteed to be damp proof. It will then be sunk on the foundation and air pumped into it. The approaches to either end will be by a broad roadway, let down at a slight grade, but there will be practically no grade in the tunnel itself.

One of the interesting features of the tunnel is that it will not be limited to accomodating merely a pair of tracks for train passage. It is to be a broad roadway as well for foot passengers, automobiles and all kinds of vehicles. It will be ten thousand feet long by one hundred wide, a submarine boulevard well lighted and ventilated. It will be a passageway for the freight of the nine great trunk lines terminating in New Jersey, for it is planned to construct as well a roadway connecting with the bridge to Jersey. This route, it is claimed, will shorten the distance to New England and Canada on through traffic from the South by eighteen miles, and away with the expensive system of freight transport by lighters.

To keep themselves posted in the progress of the arts in which they are interested, inventors and manufacturers should subscribe for the INVENTIVE AGE, which publishes a list of all patents issued each month. The low subscription price and the character of the publication entitle it to the support of all the inventors of the country.

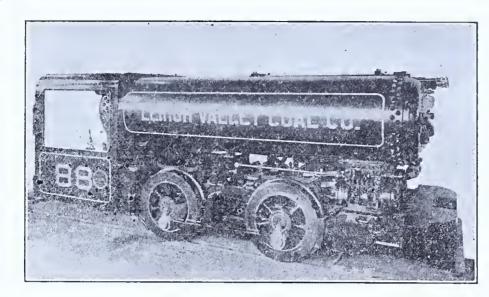
A

COMPRESSED-AIR LOCOMOTIVES IN MINING SERVICE.

In some coal mines it is found desirable to utilize compressed air locomotives instead of electric or steam haulage engines, on account of the danger from the latter where explosive gases are to be contended with. The accompanying illustration shows the construction of a nine-ton compressed-air engine as utilized by the

dangerous boilers are thus avoided, all fire being thus eliminated, and sparks as well, due to electrical contact with trolley or third-rail electric locomotives.

This air engine was designed for a four-foot gauge, and has a wheel base of four feet, with a total length of fourteen feet over the bumpers. The



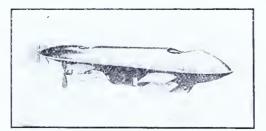
Lehigh Valley Coal Company, having a working pressure of 140 pounds, and a storage pressure of 800 pounds. There are two tanks provided, each of which measure 10 feet in width and 30 inches in diameter. Instead of steam being supplied to the working cylinders (which are 8 inches in diameter, with a 10 inch stroke) the air is supplied from the main storage tank through reducing valves, and the

drivers are 28 inches in diameter, the wheels being placed on 22 inch centers, while the total height of the locomotive is only 5 feet 7 inches, and its width 5 feet 6 inches. It is maintained that the exhaust from these air engines is a decided advantage in ventilating a mine, while the exhaust from steam engines, even where they may be utilized in mines with any degree of success, is a decided detriment, vitiating the air with smoke and foul gases.

THE HINIKER HELICOPLANE.

The Hiniker invention is not an aeroplane, not a dirigible balloon, but an airship pure and simple. It is of the helicoplane type, that is, an airship that by its own power lifts itself into the air perpendicularly and directly from its resting place.

The body of the ship is oval in shape and tapers at both front and rear. The car is under the body, attached to, and actually a part thereof. In proportions, the ship has a breadth one-third of its length, and depth one-third of its breadth.



The lifting mechanism is composed of two fans, one fore and one aft. These fans are constructed in drums running entirely through the vessel from top to bottom, thereby obtaining from the fans a maximum of efficiency with a minimum of power. The car contains the engine, the passenger compartment and storage room for fuel.

In the rear, behind the car, and operating in the open air is the pro-

peller designed to drive the ship forward. On either side of the body of the ship are two sets of planes of small dimensions. Large aeroplanes are unnecessary because of the unique construction of the body itself, this body acting as an immense plane while traveling through the air.

When all is in readiness to make an ascent, the lifting fans are set in motion. The ship rises directly from its resting place. When the desired altitude has been attained the lifting fans are stopped, hoods are projected over the top and bottom of the drums, and the propellor is set in motion to drive the ship forward. Because of the simple and compact construction, and the elliptical shape, the air glides over the vessel with a minimum of resistance.

The body of the ship is composed of magalium, a metal approximately 15 per cent lighter than aluminum. This metal cannot in any way be affected by atmospheric conditions. The body of the ship contains twenty compartments, ten on each side. Each compartment is entirely separate from its neighbor, and each is filled with hydrogen gas. The gas lightens the weight of the vessel approximately 50 per cent. As the car nears the earth in descent, the lifting fans are set in slow motion and the car alights in an easy and graceful manner.

The car and body of the ship are water tight and no harm would come if it should alight on water.

Debasing Money.

The methods of certain gentlemen known as counterfeiters, who are inclined to dispute the government's right to a monopoly of the coinage business, and who insist upon sharing in the profits to be made from this particular operation, are familiar to every one. The handiwork of these gentlemen, while annoying, is nevertheless more readily detected than that of some of their competitors whose work assumes another phase, namely, the debasement of coin. Gold coin, (since the low price of silver has made this form of circulating medium immune to attack) is especially subject to the activities of these members of society, who regard its mutilization as an attractive and lucrative method of obtaining a livelihood.

It is a curious fact that the practice of debasing coin was first introduced into England by a king, who needed more money than the law allowed him. He increased the amount of alloy and decreased the amount of precious metal contained in the coins issued, thereby making it possible to save enough for his personal uses. This practice has been carried on in various countries, as well as the simpler method of chipping the edges of coins; but in modern times, with the facilities possessed by the people for discovering any roguery of the kind, it has gone out of fashion. Tampering with coins is now the monopoly of private individuals, whose efforts in this direction, it is needless to state, are not appreciated by the government.

Various schemes are employed to diminish the weight of gold coins. One of the most common is a process known as "sweating," which consists of the immersion of the coin in aqua regia, which removes the material equally from all the surfaces, generally to the extent of one twentieth to one tenth of the total weight. This method is advantageous in that it does not affect the ring of the piece.

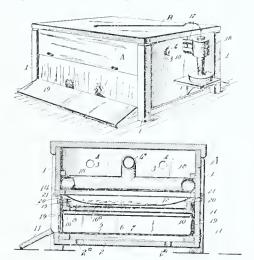
Plugging is another method. This consists of drilling the milled edges between the gold and filling the cavity so made with some base metal. After the cavity is so filled, the edges are remilled. A third process is filling. In this, the operator uses a fine saw to cut away to the thickness of paper the top and bottom surfaces of the coin, and substitutes a base metal from the gold removed from the center. After inserting this base metal and soldering the parts together, the edges are remilled and gilded, and to all appearance a perfect coin is produced. All of these methods are facilitated by the fact that a certain loss of weight is expected of gold coins in circulation, and is provided for by special appropriation from Congress. The loss by abrasion, etc. may, under the law, be as great as one-tenth of a grain per annum for the larger pieces, and when the old coins are presented at the mints, it is very hard to tell, especially in the case of the process first above described, whether the loss in weight is due to the activities of the lightfingered gentry, or to the friction to which the coin would naturally be subjected in the channels of trade.

CLEVER NEW PATENTS.

Convertible Incubator and Brooder .-Spring for Bed Bottoms.—Train Pipe Coupling .- Cart for Street Sweepers' Use.

Convertible Incubator and Brooder.

On the theory that artificial incubation and brooding should as closely as possible adhere to nature's plan of hatching and brooding chicks, a device that may be convertible from an incubator into a brooder has been invented by Henry M. Sbeer, of Quincy, Ill. As at present constructed. these devices are distinct and different in every way; but the invention in question provides means of combining them. It consists of a box resting on very short legs, and baving holes in the bottom and end for ventilation. A false bottom 5 (see the transverse vertical section in accompanying cuts) rests on the bottom 2 and comprises a frame of woven wire overlaid with burlaps, which furnishes a floor for the chicks and permits the circulation of air. It can also be easily cleaned. The egg tray 8 has a bottom of wire netting, and is covered by the hover 12, made of cheese cloth on a frame. Heating apparatus is arranged over the hover, comprising a boiler 16 heated by a lamp and a system of pipes surrounding the egg chamber

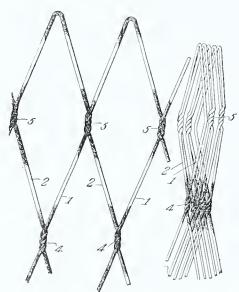


and giving the greatest beatthrough the center of the apparatus, far enough away to be safe for the contents, and being equalized by radiation so as to give a uniform temperature throughout. The heated water passes from the top to the opposite ends and returns through the outer tubes to the bottom of the boiler. When the eggs are hatched, the egg tray is removed, curtains 19 are attached to the hover by hooks and eyes, and the doors 11 at the ends of the tray are opened and rest on the ground at their outer edges, to provide runways for the chicks, which enables them to pass in and out freely and prevents their being crowded. The curtains cut off drafts and the hover being located where it is, affords an equal distribution of the heat and prevents the chicks from coming in contact with the hot pipes of the boiler.

Spring for Bed Bottoms.

Many are the applications of woven wire, and wide are the methods of embe folded so as to occupy but very little space. Gary B. Smith, of Minneapolis, Minn. who has just patfabric which permits them to flex in one direction and prevents slipping in the other. The bed fabric is made of flange, and thus holds the coupling

wire cable cut into lengths a little greater than twice the width of the fabric, each length being bent at about its center and then bent as follows to form one section of the fabric: one arm forms one side of all the loops in a transverse row and the other arm the other side. The loops herein are shown as of diamond shape in the cuts, which illustrate the spring open and closed. Each arm is first given a series of twists, upward, downward

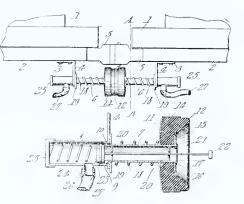


and then up again; in the next twist the first bend is downward, so that while each twist comprises three bends the position is alternate. Thus the first pair of twists form the sides 5 of the first diamond and must engage the sides of the diamonds in the next two sections, while the next pair of twists which engage each other form the end 4 of the first diamond, and so on across the fabric. The construction is such that the twists can all be made in a single die, thus enabling the fabric to be made cheaply. 'This disposition of the twists permits the loops of one section to flex at their sides with those of the next without getting out of shape at the end. This allows the sections to be folded into convenient space for shipping or storage. The hinged joints 5 are so made that the sections cannot move longitudinally on each other, so that becomethey cannot displaced throughout the bed spring, and they cannot move transversely of the bed and so cause creaking sounds. These joints also help to keep the shape of the loops.

Train Pipe Coupling.

It is important in joining cars together to couple the air brake pipes so as to provide a continuous passage therethrough. Means for automatically accomplishing this so that the trainmen do not have to go between the cars, the couplings being so constructed as to always be in alinement, and so mounted that a continuous pipe passage may be maintained even when the train is rounding a sharp curve, are embodied in a recent patent by Josiah Sullivan and Charles E. Sullivan, of McCook, Nebr. The drawings, which show a ploying it in industry. The latest side elevation and a longitudinal is a new form of bed spring which can section of the coupling, also show beams on the bottom of the car with an angle plate, forming a channel in which the coupling bar 5 slides. ented the device, has a particular form The tubular member 6 has its smaller of twist between the sections of the portion 7 swiveled in the vertical flange of the angle plate, and also has a shoulder 9 which bears on the said

member in position for coupling. Another shoulder 10 on the tubular member serves as an abutment for the piston, and on the front end of the tube 6 is a flange and disk, held together by the front end of the portion of the tube. A compression spring 18 bears against the flange and against the washer 19 on the coupling, which in turn bears on the flange of the angle plate, the spring thus holding the shoulder 9 against the rear face of the flange, and maintaining it yieldingly in position to engage with a similar coupling on the next car. The swivel connection of the tube with the flange keeps the contact between the disks of the two cars from being broken when the train rounds a curve. A valve stem is slidably mounted in guides in the tube, the front end protruding beyond the discharge end of the coupling and being provided with a head adapted to impinge on a similar head on the next car. The rear end of the stem carries a piston which reciprocates in the portion 8 of the tube, and a spring 24 in this portion bears on the piston to hold it yieldingly in contact with the shoulder

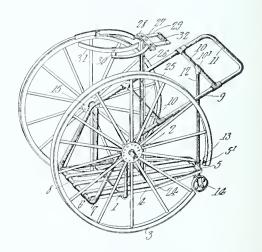


10, and abuts at its other end on the cap 25, which may be removed from the end of the portion 8 to permit access to the inside of the coupling to clean or repair it. It will be seen that the spring 24 holds the piston against the shoulder 10, between the inlet port 26 (which connects with the train pipe 27) and the discharge end of the coupling. Thus when the cars are uncoupled, air cannot pass through the tube. When the cars are joined, the head 22 on one car will engage with the like head on the next car, causing the rods 21 to slide back and disposing the pistons 23 between the inlet ports and the caps. This causes a continuous pipe connection to be effected through all the cars of the train.

Cart for Street Sweeper's Use.

A rubbish cart intended to be operated by hand, and holding a dirt receptacle and a sprinkling can, has been patented by Reuben D. Wirt, of Philadelphia, Pa. Novel means are provided for supporting the bag and for connecting the handle of the cart with the axle. As will be seen in the cut, the center portion of the axle supports the side strips of the cart platform, these strips converging rearwardly and being connected by an end strip 5, while their front ends are secured to cross rods 6. Metal slats

8 are secured to the strips 5 and the cross rods, and bear down on the axle and form the platform. The ends 7 of the rods 6 are fastened in the front ends of the tubular side members 9, which pass close to the hubs of the wheels and extend down forward and upward and rearward from the trunnions, and are connected together by cross members 10 and have a handle 11 at the rear. The stem 12 is mounted for rotation on the rear cross bar 10 and in the casing 51 on the cross strip 5 of the platform. The caster wheel 14 helps to support the platform. Each side member 9 has a saddle riveted at the bend, with a downward extension which is flanged and grooved. A bearing plate slips in the grooves and has a stop ring bearing against the extension to form a thrust bearing for the hub of the wheel. A pin passes through the flanges and holds the plate from longitudinal movement on the extension, and the plate and extension serve to securely hold the side members 9 to the axle when the pin is in place. On removing the pin, the plate can be pushed out of the grooves and the extension lifted off the trunnion. The bag is held in place as follows: The cross strip 24 has a standard 25 extending perpendicularly from the platform and engaged by a post 26 bent back and secured between spaced cleats 28. Curved levers 29 are fulcrumed between the ends of these plates, the front end of each lever being secured to an ear 30 of an arcuate jaw 31. A spring draws the ends of the levers together and keeps



the jaws apart. The open end of a bag is placed between the jaws while they are together, and opposite portions of the bag are wrapped about the jaws. These are then released and the spring will draw them apart so as to cause the folds of the bag to be tightly bound upon the jaws. The bag is thus supported with its bottom on the platform. A watering can may be placed on the platform back of the standard 25. The device is simple and compact, and will not easily get out of order.

LATUNTO,

DATING TRADE-MARKS, COPYRIGHTS, AND DESIGNS. THIRTY YEARS PRACTICE.

Send Your Business Direct to Washington. It Saves Time and Insures Better Service.

My office is close to U. S. Patent Office. Personal attention given. Book "How to Obtain Patents," etc., sent free. Patents procured by E. G. Siggers receive special notice, without charge, in THE INVENTIVE AGE, an illustrated monthly—twenty-third year—terms \$1.00 a year.

E. G. SIGGERS,

918 F STREET NORTHWEST, WASHINGTON, D. C.

LATEST COURT DECISIONS IN PAT-ENT, COPYRIGHT AND TRADE-MARK CAUSES.

GENERAL ELECTRIC CO. v. ALLIS-CHALMERS CO.

(Circuit Court of Appeals, Third Circuit. Jan. 31, 1910. 178 F. R. p. 273.)

1. PATENTS-INFRINGEMENT - PROOF OF IN-FRINGEMENT.

The mere fact that a device may be within the letter of a claim of a patent is not con- 1. Patent-Right to Patent-Abandonclusive proof of infringement.

2. PATENTS - INFRINGEMENT-CONTROLLER FOR ELECTRIC MOTOR.

The Potter patent, No. 671,232, for an improvement in controllers for electric motors, claim 1, construed in connection with the specification, and, as limited thereby, held not infringed.

ALLEN et al. v. WALTON WOOD & METAL CO.

(Circuit Court, N. D. New York. March 30, 1910. 178 F. R. p. 287.)

1. EVIDENCE-JUDICIAL NOTICE-INVENTION.

In determining the question of invention in a patent suit, the court may and should take judicial notice of generally known facts and devices, and of what is shown and illustrated in the ordinary dictionaries.

2. PATENTS—INVENTION—SLED RUNNER.

The Allen patent, No. 797, 338, for a runner for sleds, which runners are laterally flexible, so that the sled may be guided by bending them to the right or left by means of a device attached to the front for that purpose, is void on its face for lack of invention in view of the prior art, as disclosed therein and of which the court can take judicial notice, and especially of the prior patent, No. 408,681, to the same patentee for a run-ner which differs from that of the later patent only, in that the point where the runner commenced to curve upward might be anywhere in front of the forward knees, while in the later patent it is fixed "intermediate" such knees and the front end of the runner.

3. TRADE-MARKS AND TRADE-NAMES-UN-FAIR COMPETITION—IMITATION OF PAT-ENTED ARTICLE.

If the manufacturer of an article copies the form and ornamentation of a patented article made by another so as to pass off his article as that of such other, the latter may maintain a suit both for infringement of the patent and for unfair competition, and, although the defendant may not use the patented mechanism and therefore not be liable for infringement, he may still be chargeable with unfair competition.

4. TRADE-MARKS AND TRADE-NAMES-DRESS OF PATENTED ARTICLE—EFFECT OF EX-PIRATION OF PATENT.

Where an article made under a patent was made in a certain form and color and with certain ornamentation to distinguish it as the patented article, the exclusive right to such form, color, and ornamentation ceased with the expiration of the patent, and the right to use them passed to the

5. TRADE-MARKS AND TRADE-NAMES-SUIT FOR UNFAIR COMPETITION-SUFFICIENCY OF BILL.

A bill charging the defendant with unfair competition in imitating in form and appearance an article made by complainant for the purpose and with the effect of deceiving purchasers, and inducing them to purchase such article as that of complainant, is not subject to demurrer, which admits such allegations, even though complainant's article was made under a patent which has expired: the effect of the alleged imitation being a matter to be determined on the evidence.

WHITIN MACH. WORKS v. HOUGHTON. (Circuit Court of Appeals, First Circuit. April. 6, 1910. 178 F. R. p. 444.)

1. PATENTS - CONSTRUCTION - RIGHT TO EQUIVALENTS.

The facts that the specification of a patent describes two forms of one element of the combination which may be used in the alternative, while a claim describes but one of

such forms, does not preclude the patentee from invoking the doctrine of equivalents as to the alternative form.

2. PATENTS-INFRINGEMENT-THREAD GUIDES FOR SPINNING MACHINES.

The Houghton reissued patent, No. 12,263 (original No. 753,577,) for improved thread guides for spinning or twisting machines, claim 3 construed, and held infringed.

CONTINENTAL RUBBER WORKS v. SINGLE TUBE AUTOMOBILE & BICYCLE TIRE CO.

(Circuit Court of Appeals, Third Circuit. Feb. 8, 1910. 178 F. R. p. 452.)

If the first inventor of a device exercise reasonable diligence in reducing it to practice, he does not lose his right to a patent because a second and independent inventor of the same device may have first put it into actual use.

2. PATENTS - VALIDITY AND INFRINGEMENT -PNEUMATIC TIRE.

The Tillinghast patent, No. 497,971, for a pneumatic tire, held not anticipated, valid, and infringed.

AMERICAN THERMOS BOTTLE CO. v. VACUUM SPECIALTY CO.

(Circuit Court of Appeals, Second Circuit. April 4, 1910. 178 F. R. p. 552.)

PATENTS-INFRINGEMENT-THERMOS BOTTLES.

The Burger patent, No. 884,567, for an improvement in double-walled vessels, which consists of spacing blocks of yielding nonconducting material placed between the inner and outer walls of a thermos bottle, "held permanently in position by friction only," held not infringed by blocks cemented to one of the walls.

TOLEDO COMPUTING SCALE CO. v. MONEYWEIGHT SCALE CO.

(Circuit Court, N. D. Illinois, E. D. April 6, 1910. 178 F. R. p. 557.)

1. Patents-Reissues - Time of Making APPLICATION.

A patentee must act promptly in applying for a reissue after discovery of the error which makes a reissue necessary, especially after public use of the device covered by the reissue claims, or after such an act as would have been infringement if the reissue claims had been in the original patent.

2. Patents-Reissues-Review of Decision OF COMMISSIONER.

The question whether the whole record shows such inadvertence or mistake as entitles a patentee to a reissue is one of law, and the decision of the Commissioner of Patents thereon will be reviewed by the

3. PATENTS-REISSUES-VALIDITY.

A reissue patent may broaden a claim in a proper case as well as narrow it; the purpose of the law being to encourage honest reissues and to condemn only those which are fraudulent, unjust, or negligent.

4. PATENTS-REISSUES - GROUNDS OF RE-ISSUE INADVERTENCE.

The inability of the solicitors of a patentee to put the claims into proper form to cover the real invention constitutes a case of inadvertence authorizing a reissue, and in such case the abandonment of such claims on their rejection by the Patent Office was not an abandonment of the invention and did not preclude a reissue and the substitution of claims which properly disclose it.

5. PATENTS—VALIDITY AND INFRINGEMENT -Computing Scale.

The De Vilbiss reissue patent, No. 12, 137, (original No. 649,915), for a computing scale, is not invalid as departing from the original invention nor because the claims are broader than those of the original patent, being no broader than necessary to cover the real invention shown by the specification and drawings. The reissue also covers a true combination which produces an improved result and discloses patentable invention. Also, held infringed.

SEEGER REFRIGERATOR CO. v. WHITE ENAMEL REFRIGERATOR CO.

(Circuit Court D. Minnesota, Third Division. April 9, 1910. 178 F. R. p. 567.)

1. PATENTS-SUIT FOR INFRINGEMENT-IN-

The fact that the defendant in a suit in equity for infringement of a patent has ceased infringement does not defeat complainant's right to an injunction, where defendant contests the validity of the patent.

2. PATENTS-INFRINGEMENT-REFRIGERATOR.

A preliminary injunction granted restraining infringement of the Quinn patent, No. 539,009, for a refrigerator, on prior adjudications of validity and infringement by the refrigerator made by defendant.

3. PATENTS-NATURE OF RIGHTS SECURED BY PATENTEE—USE OF NAME.

A patent does not give the right to any particular name for the patented device.

4. TRADE-MARKS AND TRADE-NAMES-RIGHT TO EXCLUSIVE USE.

A patentee cannot by applying to his device a word which is descriptive only acquire the exclusive right to use such word as against another maker of a device which does not infringe his patent, of which the word is equally descriptive.

5. TRADE-MARK AND TRADE-NAMES - EX-CLUSIVE RIGHT TO NAME-EXTENT OF USE.

Evidence considered, and held insufficient to show that the word "Siphon" had become identified by the public with refrigerators made under the Quinn patent, No. 539,009, to such extent as to entitle the owner of such patent to a preliminary injunction to restrain another manufacturer from using the words "Siphon" or "Siphon System" or "Syphon" or "Syphon System" in connection with its refrigerators.

CORRINGTON et al. v. WESTINGHOUSE AIR BRAKE CO.

(Circuit Court of Appeals, Second Circuit. April 6, 1910. 178 F. R. p. 711.)

1. PATENTS-DATE OF APPLICATION-SECOND APPLICATION FOR SAME DEVICE.

A second application for a patent, describing the same device as a former one, which is abandoned with the acquiescence of the Patent Office, will be treated as a continuation of the first, and as relating back to the date of its filing, for the purpose of a claim of prior public use more than two years before the second application was filed, but less than two years before the first was filed, even though the patentee requested the suppression of the first.

2. PATENTS - SUIT FOR INFRINGEMENT-PLEADING.

The complainant in a suit for infringement should advise the defendant by allegations in his pleading of the date when the application for the patent was filed, when a date earlier than that of the application on which the patent was granted is relied on to meet a defense of prior public use.

3. PATENTS-INVENTION-NATURE OF PAT-ENTABLE "INVENTION."

A theory or mental conception of a new device is not "invention" within the patent law, and the date of an invention cannot be carried back of the time when it was embodied in a model or drawing, or some concrete form would enable those skilled in the art to construct the device.

4. PATENTS-PRIOR USE - EVIDENCE TO ESTABLISH.

While prior use, to invalidate a patent, doubt, the testimony must be weighed in a patent cause as in other causes, and the court is not permitted to reject arbitrarily the testimony of respectable witnesses because of mistakes and differences in non-

5. PATENTS—ANTICIPATION—INFRINGEMENT -FLUID PRESSURE BRAKE APPARATUS.

In the Corrington patent, No. 762,282, for a fluid pressure brake apparatus capable of operating as an engine brake system in connection with the regular automatic brake system on the cars, either jointly or alternately, holding brakes on the engine while releasing and recharging on the cars, or vice versa, claims 1 to 6, inclusive, which

are broad claims, are void for anticipation. an apparatus embodying all the essential principles of that of the patent having been in actual use prior to the date of the pat-entee's invention; and in view of the invalidity of the generic claims, those remaining, Nos. 7 to 14, inclusive, must be limited to the structures described. As so limited, such claims, if not anticipated, held not in-

CHILDS et al. v. BROCQ.

(Circuit Court of Appeals, Second Circuit. April 4, 1910. 178 F. R. p. 719.)

PATENTS--AGREEMENT TO ASSIGN-SUFFI-CIENCY OF EVIDENCE.

Defendants contracted with plaintiff that they would at their own expense apply for a patent for an article invented by plaintiff, and as soon as a patent was issued and a satisfactory practical demonstration had, would pay plaintiff \$500, and the profits on the patented articles sold until he had received \$2,500, for his invention. They made two applications for a patent, both of which were rejected; but one of defendants subsequently obtained a patent for a similar article. No profits were made from its sale, however, and it proved commercially a failure. Held, in an action by plaintiff, claiming that such patent embodied his invention, that if the action was considered as one on the contract there could be no recovery beyond \$500, because further payment was contingent on the making of profits; that if considered as an action in tort the measure of damages was the value of the invention, of which the price fixed by the contract furnished no evidence; and that a verdict for plaintiff based thereon for the full \$2,500 could not be sustained on either

DEY TIME REGISTER CO. v. W. H. BUNDY RECORDING CO.

(District Court of Appeals, Second Circuit. April 4, 1910. 178 F. R. p. 812.)

PATENTS—ANTICIPATION-WORKMAN'S TIME RECORDER.

The Dev patent, No. 786,011, for a workman's time recorder, using a two-color ribbon, shifted automatically to print regular records in one color and irregular records in another, held void on the evidence for anticipation by prior public use of the device by another; also held not infringed, if conceded validity.

JOHNSON FURNACE & ENGINEERING CO. v. WESTERN FURNACE CO. et al. (Circuit Court of Appeals, Eight Circuit. March 28, 1910. 178 F. R. p. 819.)

1. PATENTS—ASSIGNMENTS—EFFECT AS ES-

One who actively participates in the sale of a patent and receives a share of the proceeds, and all in privity with him, are estopped to deny its validity as against the purchaser or his assigns, and a corporation subsequently organized by him is so in privity with him and effected by such estoppel.

2. PATENTS - PERSONS ENTITLED TO PAT-ENTS-CORPORATION AND OFFICER.

The fact that a patentee, when he made the invention of the patent, was general manager and director of a corporation, does not give the corporation any right or interest in the patent, in the absence of an agreement therefor.

3. PATENTS-CONSTRUCTION-ACQUIESCENCE IN RULING OF PATENT OFFICE.

Where an applicant for a patent materially modifies a claim in accordance with a requirement of the Patent Office, it will not be construed as it would have been if it had not been so modified, even though the modificatian was made under protest, or the decision of the Patent Office was erroneous

4. PATENTS - "INFRINGEMENT" - IDENTITY OF DEVICES.

The performance by a device of the same function as the device of a patent does not alone constitute infringement, but it must also be the mechanical equivalent, performing the function in substantially the same way.

5. PATENTS-INFRINGEMENT-WATER-COOL-ED GRATES.

The Johnson patent. No. 778,749, for a grate, having hollow bars adapted to be cooled by circulation of water through them, is not infringed by the grate of the Parkison patents, No. 828,769 or No. 834,032.

MECHANICAL INVENTIONS AND DESIGNS

Patents for which have been procured through the Patent Soliciting Office of E. G. Siggers, Patent Lawyer, Washington, D. C.

Isaac Baumgartner, Latham, Kan. Automatic Drinking Fountain.—The main object of this invention is to provide an automatic drinking fountain especially adapted for fowls and the like, and one containing a reserve supply of water, the dispensing of which is controlled by the amount of water in the drinking pan. The invention comprises a pan in which is arranged a water receptacle, having suitable supporting legs secured to the underside thereof and resting in the pan, a water discharge pipe extending from the underside of the receptacle and having an upturned end, and an arm pivoted to the underside of said receptacle adjacent the discharge pipe, one end of the arm being provided with a float chamber and the other provided with a valve, adapted to open or close the upturned end of the water discharge pipe. when the water in the pan deviates from a predetermined level.

Annie C. Caldwell, Oakland, Cal. Washable Case for Comfortables .-Heretofore comfortables or like articles of bed covering have not been washable for the reason that the comfortable was covered by material which was permanently fastened in place, and it was impossible to put the comfortable as a whole in the wash because of the cotton filling. The object of this invention is to avoid this difficulty by providing a slip cover, which is adapted to enclose the comfortable and form an outside facing therefor, the cover having fastening devices at one end whereby the ends of the slip may be closed, and the comfortable and slip being provided with a series of tapes. so that the two may be attached along the length of the comfortable, or across it so as to prevent any relative movement between the slip cover and the body of the comfortable.

Frederick W. Goedeke, Evansville, Ind. Corner Icon. - The object of this device is to improve the construction of corner irons for bread and laundry baskets, boxes, etc., and to provide a corner iron adapted to be readily stamped from a single piece of sheet metal, the stamped blank consisting of a substantially oblong body portion having approximately triangular extensions of unequal length, located centrally of one side of the body, the blank being folded to form a corner iron having angularly related sides and a double re-enforced bottom. The over-lapping bottom portions are provided with registering openings for the reception of rivets to secure the same to each other, and the sides are provided with openings for the reception of means for fastening the iron to the basket.

James W. Given. Sutton, W. Va., and John L. Fogg, Weston, W. Va. Boiler Feed Water Regulator.—The object of this invention is to provide a device for controlling the automatic admission of fresh water into a steam boiler when the water therein has fallen below a certain level, and it consists of a thermostatic pipe, the Iower end of which is connected to the water gauge, and the upper end thereof has an arm connected to a valve which controls the feed water pipe. When the boiler contains sufficient water, the thermostatic pipe will also contain water, and as metal when in contact with hot water will not expand to as great an extent as when in

contact with steam, there will be comparatively little action on the valve; but when the water in the boiler becomes low, steam will enter the thermostatic pipe, expand the same, raise the water inlet valve and allow a sufficient supply of water to enter the boiler. When this is done the valve will automatically close.

Minor Waters, New Albany. Ind. Three patents.—The object of the invention of the first patent is to provide a device adapted to be applied to switch rails, and capable, should the track get out of gage, of being readily adjusted so that the switch joints will abut solidly against the rails. Should the engine run through the joint and bend the crank of the switch stand, the clamp will be capable of adjustment to overcome the twisted crank, and enable the switch stand to be adjusted within a few minutes. The device comprises upper and lower plates, the upper plate being provided at its outer end with a flange adapted to be connected to the rail near the switch joint, the outer end of the lower plate and the inner end of the upper plate being connected by side tlanges, which provide a sleeve in which the connecting base of the rails, which is bolted to the lower plate, slides when adjustment of the switch joints is made.

The invention of the second patent has for its object to provide a telephone attachment in the form of an arm pivoted at its lower end to the transmitter support, and at its upper end provided with a clamp, which constitutes an effective support for the receiver, and one that will hold the same in proper relation to the ear of a user of the instrument. Intermediate its ends the arm is provided with a hook which constitutes actuating means for the usual switch mechanism, the arrangement being such that the actuating means constitutes a stop for limiting the movement of the receiver support.

The invention of the third patent has for its object to provide a claw bar for extracting railroad spikes, etc., which is equipped with detachable claws adapted when broken or worn out to be replaced, and it consists of a bar or lever having a shank and opposite shoulders at the inner end thereof, a pair of claws consisting of inner attaching portions secured to the sides of the shank, the inner ends thereof fitting against the shoulders, and front spike-engaging portions spaced apart and extending in advance of the shank.

Edwin L. Larson, De Kalb, Illinois. Track Sanding Device.—The main object of the invention of this patent is to provide a means for effectually sanding car tracks to prevent slipping of the wheels of the cars traveling on the same. The invention consists in a hopper mounted on the car, a frame hinged to the underside of the car and carrying a shaft, one end of which is provided with a friction wheel for engaging the car wheel, and the other end is provided with a cog, which is geared by a chain to the feed screw of the sand hopper, the latter being connected to a sandconducting pipe leading to the track. The friction wheel is normally held out of engagement with the car wheel by a spring, but a foot lever is provided on the hinged frame by which the motorman can put the device into operation at will.

Edward Bambauer, Volta, Cal. Metal Punching Machines. Two patents.—The invention of the first patent has for its object to provide a punching machine, capable of rapid operation and adapted to punch holes of various sizes and at different intervals with absolute accuracy in various kinds of sheet metal, boiler iron and analogous material. The invention

comprises a frame slidable along a fixed track and carrying a punch. The frame is adapted to clamp the material to be punched, and is provided with ratchet teeth, which cooperate with the pawl carried by the handle of the punch. One movement of the handle feeds the frame along the track, and the opposite movement of the handle operates the punch.

The invention of the second patent has for one of its objects to increase the power of leverage of the machine covered by the former patent, whereby the same may be operated with greater ease and rapidity. Another Object is to increase the strength and durability of the machine, and to relieve the same of side strain on the operation of the actuating cam, and to increase the efficiency of the adjustable clamping means for holding the sheet metal or other material operated on. A further object is to equip the machine with adjustable reversible guides, adapted to enable the material to be readily set in proper position for punching a plurality of rows of holes.

George A. Armstrong, Youngstown, Ohio. Attachment for Adding Machines.—One of the objects of this invention is to provide means employed in connection with a computing machine for stamping and printing the checks, as the amounts designated thereon are computed by the machine, thus effecting a material saving in time and labor and insuring the marking on each check or paper, of the amount which is recorded by the machine. Another object is to provide mechanism that is practicable and entirely accurate, is directly associated with the computing or adding machine, and will successively print and pile the checks in the order in which their amounts are recorded by the computing machine. The attachment can be used in connection with practically any well known type of machine, and can be applied thereto by an unskilled person.

Thomas C. Brasket, Anderson, Ind. Meat Slicer.—One of the objects of this invention is to provide a comparatively simple and inexpensive meat cutting machine, capable of easy operation to cut meat or other material into slices of uniform thickness, and adapted to automatically feed the material to the knife at the end of each cutting operation. Another object is to provide a cutting knife adapted to travel through the meat to be cut and to rotate during such cutting operation, thus insuring a clean and uniform cut.

Charles E. Green and Thomas C. Brasket, Anderson, Ind., inventors; George W. Hoppes, same place, assignee of one half interest. Fire Escape.—One of the objects of this invention is to provide a simple, inexpensive and efficient fire escape, designed to be mounted within a building, and capable of being readily swung outward through a window, or other opening, and equipped with convenient operating means for permitting persons to descend to the ground. A further object is to provide a fire escape of this character, provided with a brake and a governor for operating the brake, to auto-matically control the descent of a person, whereby persons of all weights will be safely and expeditiously lowered to the ground.

James Clark, Medina, N. Y. Steam Turbine.—One of the objects of this invention is to provide a rotary engine, preferably operated by steam, and having a plurality of pistons, each provided with a plurality of detachable blades, adapted to rotate with the piston and to pass between corresponding abutments carried by

the walls surrounding said piston. Another object is the provision of a circuitous steam inlet passage so constructed that all the power from the steam that is admitted to the turbine is used to rotate the pistons. The end thrust so common in engines of this type will be overcome.

Alfred J. Miller & John T. Metcalfe, Quincy, Pa. Controlling Mechanism for Explosive Engines.-One of the objects of this invention is to provide means for controlling the speed of explosive engines, more particularly the means for locking the exhaust valve in an open position, and stopping the ignition mechanism when the engine reaches a predetermined rate of speed. Another object is to provide novel means in the form of a centrifugal governor to operate the ignition mechanism and throw the same out of operation, when the speed reaches a predetermined rate: also to provide automatically-controlled valve operating mechanism; and, furthermore, to provide controlling means common to both the valve and ignition operating mechanism, which will not interfere with the adjustment of the latter to vary the timing of the

Frank J. Wolf, Brooklyn, N. Y. Mechanism for Operating Draft Controlling Means.—This invention has for its object to provide an electrically controlled weight-operated means for closing a furnace door and opening the draft damper of the furnace at any predetermined time, particularly in the morning after the fire has been banked for the night, and it is desirable to have a warm house at rising time. The invention comprises a clock in circuit with an electro-magnet, which controls the means for operating a weighted chain connected to the damper and check door of the furnace, and so arranged that when the clock reaches a certain time, the electro-magnet will be energized, and the weighted chaincontrolled means released, the chain allowed to drop, the door closed and damper opened. The magnet may be also operated by a push button in the same circuit, but independent of the

William T. Hinshaw, Estill Fork, Ala. Wagon Brake.-The principal object of this invention is to provide a vehicle brake especially advantageous for heavy hauling in mountainous districts, where an easy application of great power is necessary to control a loaded vehicle. A further object is to provide a brake adapted to be conveniently operated by the brake operating mechanism of the vehicle body, and capable also of being conveniently operated by a handle extending from the top of the load, or by a rope from one of the horses of the team, so that the same person may do both the driving and the braking.

John A. McNamara, Kansasville, Wis. Concrete Molding Machine.— One of the objects of this invention is to provide a machine for thoroughly mixing cement, adapted to be used in the construction of concrete building blocks, means being provided to thoroughly compact the material prior to and upon its delivery into the molds. Another object is to provide means which will form the material into the shape of the mold and produce core openings therein, prior to the introduction of such material into the mold. A further object is the provision of the means for feeding the packed cement to the block-forming molds in measured charges.



Advertisements inserted in this column for 10 cents a line (about 7 words) each insertion. Every new subscriber sending \$1.00 to The Inventive Age will be entitled to the Age one year and to five lines three times FREE. Additional lines or insertions at regular rates.

FOR SALE—Patent No. 974,787. Drawers designed for athletes, soldiers and others who ride horseback or bicycles. Address, Hannah Goldsby, Wauchula, Florida.

FOR SALE — Patent No. 981.052. Manure Loader; Patent No. 976.250, Walking Rake. Will sell reasonably. Investigate for your self and make me an offer. Address W. F. Bohling, Arcadia, Iowa.

FOR SALE-Patent No. 975,553. Anti-slipping attachment for horse shoes; applicable to any shoe. Address, James May, P. O. Box 61, Mineola, L. I. New York.

POR SALE-U. S. Patent No. 976,289, dated Nov. 22, 1910. Lamp burner with two narrow wicks, in place of one wide wick, which does away with any high side to flame. Will accept best offer, royalty or cash. Address, A. M. Porter, Amsterdam, Mo. jun

FOR SALE—Would like to sell outright or on royalty Patent No. 675,336. A guard for receptacles for whipping cream. Investors interested in the same. please address, Norah M. Doherty, Pleasant View Farm, Vernon Centre, Connecticut.

POR SALE—Patent for Changeable Gear for Bicycles. High, low and intermediate gear immediately available to the rider without dismounting. The variations are controlled by foot. The only real improvement in bicycles for years. Simple and inexpensive. Prospective purchasers, address. J. M. Fleming, Pensacola, Florida.

FOR SALE — Canadian Patent No 125.147. Wanted parties in Canada to manufacture my combined two part pad-locking whip socket; also in U.S. royalty or cash. Address, Severin Lilland. Jewell Junction, Iowa.

FOR SALE-Two patents in U.S. and Canada. Patent No. 965.411, Combination Cultivator and Furrow Maker. Patent No. 971.218, Rotary Harrow. Based on entirely new and original idea. Will sell outright or on royalty. No reasonable offer refused. Address, Sigmund Schaller, Box 63, Haddam, Conn.

POR SALE U. S. Patent No. 974,411; Canadian Patent No. 129,289. Combination Rail Brace and Nut Lock. Prevents low joints, rails spreading, rails turning laterally. All nuts locked against turning movements, avoiding expense of track walkers. Can be used at either joints or intermediate points to best advantage, thus avoiding serious wrecks. The best combination brace yet invented. Will consider any reasonable offer, either outright or royalty and part cash. Address, C. Maunders, Jackson, Minn.

FOR SALE-U. S. Patent No. 967,746, Sash Holder. Will sell outright or on royalty basis. For particulars, address Frank E. Erickson, Marquam, Oregon.

FOR SALE-Patent No. 965.429, dated July 26, 1910. Steel Rail Joint. Address, William Arndt, 711 South Eleventh Street, Goshen, Indiana.

FOR SALE—Patent No. 969,302. Switch Operating Apparatus. Motorman can arrange switch with foot without leaving platform of car, whether car is going at a fast or slow speed. For particulars, address Franz Schad 309 Elm St., West Hoboken, N. J.

FOR SALE-U. S. Patent No. 972,127. Animal Trap. Will sell reasonably. Investigate and make me offer. Address, A. L. Newell, Route No. 1, Frost, Texas.

FOR SALE—Patent No. 970.904, dated Sept. 20, 1910. Post-mold for concrete posts. For stretching the reinforcing wires before filling molds. Canadian patent pending. Address, G. H. Fenske, Clark, Missouri.

ROR SA'.E—Canadian Patent No. 125.147. Locking Whip Socket. For cash only to highest bidder the last of my foreign patents. For further information address, Severin Lilland, Jewell Junction, Iowa.

For Sale—Foreign patents for The Wells
Butter Worker, in Canada, Mexico,
Belgium, France and England, Address, Miss
Ella Wells, R. F. D. No. 5, Shelbyville, Ky. apr

For SALE—Patent No. 969,081. Drill sharpener for hand steel for mines and prospectors. Very simple, and can be manufactured at small cost. Write for terms. Address, R. A. Schmidt, Bayard Station. New Mexico.

FOR SALE-U. S. Patent No. 892.193, dated Jan. 30. 1908. Automatic cut off for natural gas to prevent explosions. Excellent proposition. Write for particulars to, J. H. Stanton, St. Catharines, Ont., Canada.

F OR SALE—Patent No. 945,812, dated Jan. 11, 1910. Cheapest, simplest and most efficient hand-operated sanitary cow-milking machine. Good proposition, for sale or on royalty. Address, R. D. Roth, Gettysburg, Pa. my

FOR SALE—U. S. Patent No. 972,371. A new and very unique card game. Scientific, educational and fascinating; 48 cards; three color patriotic illustrations and rules; all in neat gold lettered cases. Sample 50 cents, post paid. Address, W. A. Hammett, Corsicana, Texas.

H OR SALE — Patent No. 547,581. Windrow Baling Press. A great labor and hay saver. Simple yet powerful. Address, Jacob Barens, Altus, Ark.

FOR SALE — U. S. Patent No. 947,865, and Canadian Patent No. 127,371, on a Door Catch. Either outright or on royalty. Address, William D. Taubert, care Alfred Nuffer, Hills, Minn.

FOR SALE—Patent No. 959,481, dated May 31, 1910. Automatic Rivet on Scissors. Cuts clean, saves worry and time for women. Part cash and royalty. Address, John W. Dowden, Box 122, Reeves, La.

FOR SALE—Patent No, 931.287. Permutation, Keyless Lock. May be used on trunks or suit cases; cannot be picked; no danger of losing key; profitable invention if properly handled. No reasonable offer refused. Address. Wm. Erhardt, 112 Munson Street, Astoria, Long Island, New York.

HOR SALE—Patent No. 960,942, dated June 7, 1910. Automatic Pump. Will sell outright at a reasonable price. Address. Samuel J. Jackson, Pleasanton, Alameda County, Cal.

FOR SALE—Patent No. 962,161, dated June 21, 1910. Gas burner for furnaces. Uses one-fourth less gas than other burners; will not flash out in your face when furnace door is opened. Will sell outright or on royalty. Address, Thomas Mowcomber, Elkland, Pa. apr

For Sale—Patent No. 963,417, on royalty or outright. Device for Hanging Storm Windows and Screens. The only invention of its kind. Can be manufactured at small cost. Address, Edward C. Brown, Bismarck, North Dakota.

For Sale—Patent No. 967,467, A front wheel truck for self binders and general farm traction purposes. The machinery may be arranged to combine or transmit power to front or hind wheels as needed for greater pulling power. Has been used on binder for three seasons. Saves time and horses, and makes ideal square corners. Write for information and terms for shopright. Address, T. E. Lind, Moose Jaw, Sask, Canada.

WANTED.

WANTED-Agency propositions. What have you to sell? Address, Ernest Morse, Luverne, Minn.

WANTED—Two or three persons with some capital to correspond with a patent owner of a new meritorious article. Practice on model very satisfactory. Will not sell patent but will join in company, Address, F. D. F. Box 28, Waterbury, Conn.

WANTED—Not for sale but want a company to manufacture my manure loader on royalty, Patent No. 918,695. Address, Lars C. Peterson, Osage City, Kansas.

WANTED—A company to manufacture a bag holder made of sheet iron. U. S. Patent No. 968.349, dated August 23, 1910. Will have patent for Canada in a short time. Address, Louis Hanson, Cottonwood, Idaho. apr

WANTED-Partners for foreign patents on whip socket lock, for share in patents. U. S. patent allowed. Key remains in lock when whip is loose. One-half turn of key locks whip, When whip is locked key is removed. The harder the pull the tighter the grip. For particulars address, Clarence S. Skinner, Payne, Ohio. jun

ANTED—Four (4) men to loan me \$100 each, for four years, at 6 per cent to help me to push four (4) good paying toy inventions, for which I will return to each of them their loan, and I will give also to each loaner 10 per cent of all the income from sale of said patent inventions in whatever way I may dispose of said patents. Here is your chance. Who will accept. Address, E. W. Barton, No. 35 Carroll St., Binghamton, N. Y.

Electrical Review and Western Electrician

Published weekly from the center of the industry, this publication is in the best possible geographical position to gather and present the most important and interesting news of the entire electrical industry.

SUBSCRIPTION PRICE

U. S. \$3.00 per year, Canada \$4,00 per year, Foreign Countries \$6.00 per year. Sample Copy Free

It is seen and read by practically every buyer of electrical material in this country and abroad. Advertising rates on application.

ELECTRICAL REVIEW PUBLISHING CO., 507 Marquette Bldg., CHICAGO.

A NEW BOOK FOR INVENTORS Patents and How to Make Money out of Them,

By W. B. Hutchinson.

This is the only book published, giving a detailed and full account, from the author's actual experience, of just what steps are necessary from the time the invention is conceived, to the time it is sold, with a clear and concise resume of the law and practice, legally and commercially, of trade-marks and copyrights. It also tells accurately How and What to invent. How to sell Inventions, Place them on the Market, Interest Capital in them, and to successfully Promote a Stock Company. It also contains an index of forms worth double the price of the book to any one interested.

ELEGANTLY CLOTH BOUND.

GOLD STAMPED. \$1.00 Postpaid.

Sent with one subscription to AGE for \$1.50.

Or will sell separately.

The Inventive Age Pub. Co., 918 F St., N. W. WASHINGTON, D. C.



A VALUABLE OFFER TO INVENTORS.

A Complete Outfit of Printed Matter for \$20.

- 1. A zinc etching of your invention for use in printing letterheads, envelopes, circulars, etc.
- 2. One thousand printed circulars.
- 3. Five hundred envelopes with your name and address printed in the corner.
- 4. Five hundred letterheads with a cut of your invention, and your name and address neatly printed thereon.
 - 5. A list of manufacturers in the special line of your invention.
- 6. A form letter to be followed in conducting your correspondence with manufacturers and others.
- 7. Four dozen deeds useful in selling state, county, town or shoprights. Address:—

INVENTIVE AGE PUBLISHING CO. Dept. O. WASHINGTON, D. C.

ATTENTION INVENTORS!

LISTS OF MANUFACTURERS FURNISHED.

We have increased our facilities for furnishing lists of manufacturers, and now cover every line of industry. The names are obtained from well known directories.

Our charge for each list is one dollar.

In ordering, please state specifically the class of manufacturers desired. Address: Inventive Age Pub. Co., Dept. M. 918 F. St., Washington, D. C.

Every subscriber when sending \$1.00 is entitled to a free advertisement, not exceeding five lines, of any patent in which he may be interested. The ad. will be inserted three times,

THE INVENTIVE AGE PUBLISHING CO., Washington, D. C.
I herewith enclose \$1.00 for one year's subscription to
"THE INVENTIVE AGE."
I also enclose ad. for insertion in the (Patents for Sale*) (Want*) column of your paper.
Name
P. O
STATE

*Please indicate in which column you want the ad. inserted.

N. B.—Remit in the way most convenient.



Established 1889.

Published monthly by

THE INVENTIVE AGE PUBLISHING CO.,

National Union Building, 918 F Street, N. W., Washington, D. C.

THE INVENTIVE AGE is sent, postage prepaid, to any address in the United States, Canada, Mexico, Hawaii, and Porto Rico, for ONE DOLLAR a year; to any other country, postage prepaid, ONE DOLLAR AND TWENTY-FIVE CENTS.

Correspondence with inventors, mechanics, patentees, and manufacturers, is invited. The columns of this journal are open for the discussion of such subjects as are of general interest to its

Technical matter is particularly desired. We want practical information from practical men.

THE INVENTIVE AGE is independent.

Special facilities for furnishing cuts of any patented device together with descriptive article. Business specials 10 cents a line each insertion: 7 words to the line. No advertisement less than 25

Address all communications to

THE INVENTIVE AGE PUBLISHING COMPANY. WASHINGTON, D. C.

Entered at the Post-office as 2nd class matter.

WASHINGTON, D. C., APRIL 1, 1911.

When is an Improver an Infringer?

This question though repeatedly propounded cannot be answered offhand as many people think. It always requires a consideration of the particular facts in the case. One must always know what the patent which the party is improving is on, for the first thing of importance to ascertain is, what does the patent cover? To determine this, one must have recourse to the claim or claims of the patent, and they must be interpreted in the light of the specification and drawing of the patent. This can best be understood by a single illustration: Suppose one were seeking to improve on the lamp known as the "student's lamp." This well known article of commerce consists of a stand having a flat base on which is slidably mounted a collar, held at any point on the standard by means of a set screw. To one side of the collar is fastened a reservoir for the oil, and at the other side projects the tube leading to the font or bowl of the lamp. Let us assume that the patent on this lamp only covered the construction of the reservoir, and a party seeking to improve the lamp did not wish to change the construction of the reservoir covered by the patent, but desired to construct a different type of burner. In such a case, the mere change of the burner, not covered by the patent, would not cause the improver to avoid infringement of the patent. The fact that the improver proposed to appropriate without change the construction of the reservoir which was embraced in the claims of the patent, made him an infringer of the patent on the lamp, even though he did change entirely the rest of the lamp. On the other hand, if the improver had decided to and did change the reservoir entirely so as to evade the claims of the patent on the lamp, in such a case the improver would not infringe the patent because he was not using the feature covered by the claim of said patent. Therefore, the question as to when an improver shall be held under a charge of and not for the purpose of determin-

infringement, must be determined by a consideration of what elements of the original device embraced in the patent the improver intends to use, what features he proposes to change, what changes he intends to make, and what points are covered by the claims of the patent on which he is improving.

Whenever an inventor proposes to patent an improvement on some other patent, he should always ascertain what the patent embraces. This he cannot determine merely by examining the patent himself, for no one can properly pass on the question of infringement in that way. The claims' must be considered by an expert having knowledge of the decisions of the courts in patent cases, and an examination should be made of the file wrapper and contents of the patent at the United States Patent Office. After the inventor has been advised as to what the patent which he is seeking to improve covers, then he should direct his attention to changing those features which are considered to be embraced in the claims of the patent. A patent expert can always advise the inventor of the essential points covered by the claims of the patent, and can, in most instances, tell the inventor how the claims of the patent may be evaded. In some cases, it will be comparatively easy to devise an improvement which will avoid the terms of the patent, unless the patentee should succeed in making his claims so broad and comprehensive as to cover many variations from the construction appearing in the specification and drawing of the said patent.

In this connection it should be pointed out that a change, or modification or improvement, which might evade one patent, would be insufficient to overcome another patent. A patent may be limited to one small feature, the omission of which enables any one to use the invention covered by the patent. In another case where the patenteehas been well represented in obtaining the patent, his invention is a broad one, and the claims of the patent are commensurate with the scope of the invention, it will very likely happen that few improvements can be made on the patent which will not be caused to fall within the scope of the claims of the said patent. All of this goes to show that in determining the question as to whether or not an improver on a patented device is an infringer, eyea though his improvement may be patentable in itself, the important thing is to ascertain the metes and bounds of the claims of the said patent.

There is a general impression that the grant of the patent by the Patent Office is a notice to the world that the patentee is entitled to make, use and sell his invention without interference from others. As a matter of fact, each patent issued is granted subject to the rights of owners of prior patents. It seems difficult for patentees to understand the reason for this. We repeat here, what we have often said before, that the Patent Office is constituted for the purpose of issuing patents on new and useful inventions,

ing questions of infringement. The Federal courts settle the question of infringement and determine the validity of patents granted by the Patent Office. The Patent Office, on the other hand, passes on the question as to whether or not the inventors are entitled to patents. Patents are issued every week which are rank infringements of prior patents. This condition can, in most instances, be cured by the patentee, if instead of rushing into the Patent Office with his application, he takes time and investigates the prior art, and has his attorney report on the question of infringement before making an application; but few inventors have either the foresight, the patience, or the money to proceed in this careful manner. Only when this is done can a patentee feel reasonably certain when he obtains his patent, that not only is his invention patentable, but that its manufacture and sale can be carried on without infringing the rights of the owners of prior patents.

A Novel Suit.

Enjoining the Disclosure of a Trade Secret.

Frequently inventors try to reap the reward of their inventions by means of secrecy instead of obtaining patents. Such attempts are legitimate, but they are not applicable to such inventions as designs, and are seldom applicable to machines or articles of manufacture. When an invention consists of a process, or a composition of matter where the ingredients are not apt to be ascertained by analysis of the resulting product, secrecy may be applicable if it can be maintained. The difficulty lies in the fact that inventors can seldom practice their inventions on a profitable scale without assistance from other persons, and such assistance can seldom be rendered without an adequate knowledge of the invention in which it is employed. For these reasons, secrecy is liable to be lost by betrayal, and betrayal is a risk that inventors can seldom take. When an inventor does take risk and does incur betrayal of his secret invention, his natural inclination is to turn to some court for his remedy. To that end he may begin an action at law for damages, for breach of the express or implied contract, which was broken by the betrayal; or he may, by an action in equity, seek to restrain the betrayer from a further betrayal of the unpatented secret. The action at law is valueless where the betrayer has no property upon which to levy an execution; so that the action in equity would, therefore, appear to be the best remedy.

There have been few reported cases in which any effort has been made by the inventor to enjoin the disclosure of a secret invention. For this reason, a recent decision of the Circuit Court for the Eastern District of Pennsylvania is a matter of considerable interest, involving as it did the right of protection against the disclosure of an unpatented secret pro-

The suit was brought by the Phila-

delphia Extracting Co., against the Keystone Extracting Co., and others. Upon hearing the case the facts were ascertained to be as follows:-The plaintiff was the owner of a secret process for extracting alcohol from empty whisky barrels. The process was not patented and had been employed by the plaintiff for several years. Reasonable precautions had been taken to secure secrecy, and among these the plaintiff's servants, who were necessarily entrusted with knowledge of the process, had been enjoined not to disclose any of its steps. One of the defendants, Davies by name, learned the process fully during a service of two years as engineer. While still in the plaintiff's employ, he determined to use the invention by going into business upon his own account. In the effort to attain this object, he interested the other two individual defendants in his plan, and in connection with another party, who furnished the capital, the defendant corporation was organized and started in business. The court, upon consideration of the facts in the case, held that the disclosure by Davies was a clear breach of trust, by which neither he, nor the other defendants, should be allowed to profit, and a preliminary injunction was awarded.

Though this proceeding was successful, it is manifest that such an action by the court of equity would be ineffective to prevent the secret from becoming generally known, for no action in law or in equity could be maintained against a competitor for practicing a betraved invention, unless he was a party to the betrayal. If, therefore, some third party, who had no part in the original betrayal of the secret, should have become possessed of the knowledge of the secret process for extracting alcohol from empty whisky barrels, he could never have been restrained from the use of the unpatented invention. It can only be a question of a few years when the process will become generally known in trade, and will no longer be a trade secret.

This raises the question as to the value of protecting by patents certain classes of inventions. Process or method patents are often the most valuable that are issued, when the scope or extent of the patent is taken into consideration, yet it is frequently a debatable question as to the wisdom of disclosing some peculiar method or process of manufacture by applying for a patent thereon. The difficulty of proving infringement on method patents is another factor in complicating this question. The claims of a method patent are directed to certain steps to be performed in carrying out the method. Unless the steps mentioned in the claims are used in the order named, or some equivalent order, the patent is not infringed. A patentee may be certain that an article placed on the market is made by practicing his patented method. Indeed, there may be indubitable signs to show that the article could only be made by the method set forth in the patent, and yet none of these considerations would weigh heavily in

determining the question of infringement. The inventor would have to affirmatively show that the particular article manufactured was produced by the method described in the patent alleged to be infringed, before the court would be justified in holding the alleged infringer.

As the method of making an article can be carried on in secret without the public becoming generally aware of the same, attorneys have frequently questioned the wisdom of applying for patents on certain methods or processes. Particularly is this true, where the method can be carried on by the use of ordinary appliances and without any special machinery. Aside from this difficulty of proving infringement of a method patent, we believe that an inventor is liable, in most cases, to reap the reward to which he is justly entitled by patenting his method or process rather than by trying to keep it a secret; for after the secret is disclosed, it is usually too late to take out a patent. Two years' use of this process even in secret, before filing an application for patent, would bar the right to a patent on the process.

A Versatile Lamp Post.

A lamp post that serves many purposes, every inch being utilized, has been designed for an Indiana town. It will be placed in front of one of the leading hotels. The lower section will serve as a receptacle for mail packages; above this will be a letter box, and a fire alarm is located on the opposite side of the post. On the other two sides the name of the hotel will be placed. The name of the street will be painted on glass and so placed that an electric lamp will shine behind it at night. At the very top, of course, will appear the light.

Electrocuted Eggs.

The peculiar taste of a cold storage egg is something not easy to mistake. It is possible that this taste may be removed if experiments now being made by an electrical company are successful. It is claimed that when fresh eggs are placed in cold storage the eggs are alive; that they are slowly frozen to death, and that in spite of the preservative qualities of the ice, the eggs do not taste good when cooked. It is now believed that by "electrocuting"; the eggs, the natural fresh taste may be retained and not removed when the eggs are placed in cold storage. The eggs are "killed" by placing a metal cap on each end of the egg and then throwing on a pressure of 500 volts.

A Watch that Can be Read at Night.

A watch with which time may be told during the hours of darkness is now being manufactured. To the casual observer it differs in no way from the ordinary time piece of this character, but close examination shows that each of the twelve hour points contains a tiny cavity and each of the two hands a long groove, these cavities and grooves being filled with pitchblende. The latter is the substance from which radium is made, one grain of the precious material being extracted

from several tons of the former. When taken into a dark room, the pitchblende glows brightly, the grooves on the hour and minute hands becoming streaks of light, and the cavities on the hour marks becoming dots of green fire. The amount of radium in these watches is so small that although this is the costliest of metals, the watch sells for only five dollars.

Dropping Passenger Coaches on the Run.

The ingenious means by which one of the great railroad systems in Eagland drops passenger coaches off at intermediate stations without slowing the locomotive, even for a fraction of a second, in its speed of sixty or more miles an hour, is called the "slipcoach" system. It has never been tried in America, and it consists in dropping, or slipping, one or more of the rear coaches just before the station is reached. Doubtless many American tourists traveling in England, on alighting at their destination, have been amazed to find that the coach in which they made the journey was still beside them, while the locomotive and the remainder of the train were nowhere to be seen.

The slip coaches are provided with special coupling and breaking mechanisms. One of the most ingenious of these mechanisms, says Popular Mechanics, is the vacuum break coupling, by means of which it is possible for the engineer of the train to apply the air brake on the slip coach as well as on the train until a few seconds before the former is slipped. Some distance away from the station, the guard pulls a lever which closes the vacuum break valve and sets the pneumatic slip apparatus. Then he pulls a cord to disconnect the vacuum break coupling, and raises a valve, which causes the hinged portion of the draw bar hook to drop and the coupling section of the coach in front to fall away. This completes the disconnection, and the main portion of the train, running at full speed, gradually draws away, while the guard manipulates his brakes to bring the slip coach to stop at the station, judging the distance.

While there might be lines in America where this system could be used to advantage, its success in England is due to local conditions. An express train in this country is as likely to have passengers waiting to embark at an intermediate station as it is to carry passengers wishing to disembark; but in many of the small communities along the lines out of London the passenger traffic is either to London in the morning, or back home from London in the evening. Consequently trains running out of London at certain hours of the day have passengers to drop at stations where outbound passengers need not be considered, and the slip coach method of discharge makes possible a very fast schedule. Commuters on the New Jersey lines leading out of New York would appreciate reaching home by express instead of by accomodation, and the system might also be advantageously applied to certain freight services.

Making Gold Coin.

The processes through which gold passes at the mint from the time it is received in the form of rough bars or bullion, until it is turned out as shining coin, are not generally known, and it may be of interest to note some of the steps.

Gold reaches the mints in various forms, such as bars, plate, foreign and domestic money, and all degrees of fineness are represented. It is estimated that among its receipts, the mint at Philadelphia takes in annually a million and a half dollars' worth of jewelry, dental leaf and old gold. Under the law, a certain loss of weight on accepted gold coin is permitted. The loss from a double eagle, for instance, is about a tenth of a grain for every year that it is in circulation. This loss, which is caused mainly by abrasion, is deducted from the value of the coin received by the government, unless it is within the "tolerance" allowed by law. All gold pieces deficient in weight when presented to subtreasuries or mints are stamped with the letter "L," meaning "light."

When it is remembered that the presence of one hundredth of one per cent of lead or antimony will make gold so brittle that it cannot be rolled, it will be seen that all the old gold received at the mint must be purified before working. This is accomplished by an electrical refining process known as electrolysis, by means of which the metal is purified to .999 and sometimes to 1000 fine. The gold has added to it the amount of copper necessary to give it the proper consistency, is melted in a gas furnace and cast into ingots 12 inches long, one and a half inches wide and one half inch thick. These are then subjected to a process of rolling, to compress them to the thickness desired for the denomination of the coin being made, and to extend them to six feet. For this process of reduction there is required a fifty horse power motor, and the pressure to which the metal is thereby subjected tends to harden it in a comparatively short time. To restore it to workable shape, therefore, heat must again be applied. This is accomplished by means of automatic furnaces supplied with gas.

Following this last process, which is known as annealing, the strips are cut into blanks by a cutting press run at a speed of one hundred and ninety-five revolutions per minute. The edges of the blanks are then rolled up, so as to fill up the raised border of the die, this operation tending to harden the edges. As the border is the weakest part of the die, it is necessary to have the edge of the blanks soft and pliable, and annealing is again resorted to, this time in a rotary furnace having a capacity of six tons of metal per day.

This rotary annealing furnace consists of an iron cylinder revolving in a fire-heated brick chamber. The blanks are fed into the mouth of the furnace, carried along the heated cast iron surface by means of an internal spiral, and dropped into water. After being washed in a dilute solution of

sulphuric acid and dried, they are ready for the stamping.

The large stamping or coining presses are driven by motors of seven and one-half horse power. By means of these presses, the coins are struck at a pressure ranging from fifty to one hundred and eighty tons, and the largest denominations are turned out at the rate of eighty five per minute, the capacity of the press for ten hours thus being approximately a million dollars in double eagles per day.

When the blanks are presented to the coining press, they are fitted into a tube in the front of the press and placed automatically in a steel collar located between the dies. The inside of this collar is milled, and the pressure exerted on the dies causes the metal to flow into the grooves and gives the edge of the coin the milled appearance with which every one is familiar.

Tiny Screws.

The smallest screws in the world are those made in watch factories. They are cut from steel wire by a machine; but as the chips fall from the knife it looks as if the operator was simply cutting up the wire for his own diversion. One thing is certain: no screws can be seen, and yet a screw is made by every third operation.

The fourth jewel wheel is next to invisible, to the naked eye resembling a speck of dust. With a glass, however, it can be made out quite distinctly. It has two hundred and sixty threads to an inch. These little screws are four one thousandths of an inch in diameter, and the heads are double in size. It has been estimated that an ordinary thimble would bold one hundred thousand of them. About one million of these screws are manufactured in the course of a month, but no attempt is ever made to count them. In determining the number, one hundred of them are placed on a very delicate balance, and the number of the whole quantity calculated from the weight of these. All the small parts of the watch are counted in this way, probably fifty out of the hundred and twenty. When they have been cut, the screws are hardened and put into frames, about one hundred to the frame, heads up. This is done very rapidly, but entirely by the sense of touch instead of by sight, so that a blind man with a little experience could perform the task. The next step in the process is to polish the heads in an automatic machine, ten thousand at a time. The plate on which this is done is covered with oil and a grinding compound, and on this the machine moves them very rapidly, by a reversing motion, until they are in perfect condition.

To keep themselves posted in the progress of the arts in which they are interested, inventors and manufacturers should subscribe for the INVENTIVE AGE, which publishes a list of all patents issued each month. The low subscription price and the character of the publication entitle it to the support of all the inventors of the country.

A

CLASSIFIED list of Patents issued during the month appears in each issue of the INVENTIVE AGE. This keeps inventors and manufacturers posted in the art in which they are most interested.—We will send, postpaid, to any address, printed copies of any U. S. patent, with specifications and drawings, upon receipt of 10 cents per copy.—Please give correct data in ordering.—Address.

THE INVENTIVE AGE PUBLISHING CO., 918 F St., N. W., Washington, D. C.

LIST OF PATENTS

--:0:--

Issued January 3, 1911.

MECHANICAL PATENTS.
Accounting system, CostE. C. Albree AerodromeJ. M. Chritton Adding machine attachmentC. L. Downer Agricultural implement W. H. Rice Agricultural implementF. W. Miller Air and separating out oxygen, Liquefying R. Mewese AirshipW. J. D. Bradford AirshipM. Rozboril et al. Alarm floatC. J. Owen
Agricultural implementW. H. Rice Agricultural implementF. W. Miller
Air and separating out oxygen, Liquefying
Airship
Alarm float
Anti-rail spreader. F. Lundberg Auger. Post-hole. R. H. Vesey
Antographic register. H. A. Thexton Automobile. A. W. Benjamin Antomobile dutch control. E. Havens Automobile running gear. J. B. Bostian Antomobile shed. J. J. Richter
Automobile clutch control. E. Havens Automobile running gear. J. B. Bostian
Automobile steering apparatus. H. J. Hert
Automobile steering apparatus, H. J. Hert Automobiles, Transmission gearing for D. P. Collins Auxiliary spring
Bag fastener
Baking compoundD. C. Maili
Balloons, Framework structure for
Barrel, Knockdown. F. A. Prahl Barrel-making machine . L. Bauroth Battery and holder G. L. Patterson
Bearing, Self-adjusting ball, S. G. Winequist
Bearing for side and end strains, Koher (2 pats.)
Bed, Sofat. P. E. Kvochler Bed spring. J. Schwartzman
Bed, Sofa. P. E. Krochler Bed spring J. Schwartzman Bedstead. E. F. Fisher Bechive. C. Spierling Belt drive. V. F. Prentice Belt-stretching device. G. A. Clendenning Bench adjustable work-rest. J. H. Howe Boot Life. G. Johnson
Belt-stretching device. G. A. Clendenning Bench adjustable work-rest. J. H. Howe
Bont Life. G. Johnson Boiler farnace. G. de Grahl Pouls street: P. O. Wheeler
Boilt 1119
Bottle II. G. Clabaugh Bottle-filling apparatus.
Bottle-holding receptacle, G. H. Van Court Bottle Non-weillable C. E. Lincoln
N. W. Spangenberger Bottle-holding receptacle. G. H. Van Court Bottle, Non-refillable, C. E. Lincoln Bottle, Non-refillable, J. T. McKenna Bottle, Non-refillable, J. T. McKenna Bottle, Non-refillable, C. Savino Box, W. P. Miller Box-folding machine, A. B. Cowles Box-making machine, G. D. Parker Box-stapling machine, W. Osterholm Box top, Metal, O. Recher Brace, C. R. Anderson Bracket, L. Douglas
Box. W. P. Miller Box-folding machine. A. B. Cowles
Box-making machine G. D. Parker Box-stapling machine W. Osterholm Pox ton Motal O. Becher
Brace. C. R. Anderson Bracket. O. L. Johnson
Brake and brake linerW. T. Bonner
Brake head, AdjustableP. T. Handiges
Bridges and the like, Means for operating. D. H. Haywood Briqueting apparatus, M. C. White et al. Broiler, Rotary
Broiler, Rotary. W. Doll Brooder. H. Hubenbeeker Broom-corn header. R. J. Churchill
Brush-filling machineJ. Churchth Brush, Hair-dryingK. Steen Brush head and handle, Detachable
Brush, Liquid-distributingT. b. Roche Buckle for cotton ties (2 pats.). L. W. Swafford Building constructionW. A. Bishop Buildings, Construction ofW. A. Bishop
Building construction
J. A. Babb et al. Burner deflector, OilF. A. Curtis Cable armor and tubing, Cutter for L. H. Church
Cable box. N. E. Norstrom
Cable box
Can indicator, Oil
Car-loading device
(Reissne) A Hudson
Carbonating apparatus. II. M. Smith Carboneter. J. A. Paull Card holder. G. W. Bavnett Carpet stretcher. O. C. Boff
Carrier W. F. McGlinnen Carrier J. Heimer
Card holder. G. W. Barnett Carpet stretcher. O. C. Boff Carpet sweeper. W. F. McGlinnen Carrier. J. Heimer Cartridge shell. L. A. and H. E. Sherman Cash register and recorder T. Carroll Casting. C. T. Westlake Casting copper bars, ingots, &c L. Addicks et al.
Casting copper bars, ingots, &c. L. Addicks et al. Cateh, SafetyE. B. Aiguier Cellulose derivatives from viscose, Produc-
Cellulose derivatives from viscose, Producing stable solubleL. Lilienfeld

Cellulose. Manufacture of threads from Gigar wrapper. S. Heineman Clamp. J. W. Fraser Cloth sponging and finishing machines, Steam cylinder for R. W. Hull Clothes pounder. J. L. Carder Clutch, Hydraulic. W. J. Vincent et al. Coating fabrics and the like, Machine for J. Meade Cock, Safety train-air-line entout. G. C. Gale Coll-retaining means. P. Kennedy et al. Coil-retaining means...P. Kennedy et al. Collapsible box......G. R. Tibbetts Collapsible tube and ejector therefor..... Compass and tape line, Combined. J. S. Frisbie
Deutal impression tray. . . W. M. Gantz
Deutal matrix retainer. . . J. W. Ivory Deutal impression tray. W. M. Gantz Deutal matrix retainer. J. W. Ivory Deutal matrix retainer. J. W. Ivory Deutal molding ring, Split sliding swiveled ... P. Bourne Detector meter. A. Blauvelt Discharge apparatus. H. V. R. Rend et al. Display tack, Rug. G. J. Kepke Distilling apparatus. T. B. Gantier Door brace, Seveen. W. J. Forest et al. Door check, Double-acting. J. C. Regan Door closer and check. A. J. Rosentreter Door-fastening device. L. A. Day Door locking mechanism, Emergency-exit. Draft equalizer. J. J. White Draft regulator. T. G. Mens Prain, Sanitary floor. W. Ruark Drawer handle. S. H. Brenia Dress frame. C. M. Anderson Drier. F. E. Hayden Drill coupling. M. Hardsocg Drilling-machine attachment. R. D. Currie Drop-light attachment. Adjustable. E. K. Bartholomew Drum heel pedal, Brass. H. Carney Dust guard. T. H. Symington Dust separator. W. Pittelkow Dye, Azo triphenylmethane (2 pats.). A. Hausdorfer et al. Eccentric. R. M. Clark Eccentric. A. Handorfer et al.
Eccentric. R. M. Clark
Egg beater. W. Noakes
Elastic wheel. H. G. Baldwin
Electric alternating-current machinery, Electric alternating-current machinery, Voltage regulation of dynamo.

M. Seidner Electric-circuit breaker, Automatic.

W. F. Meter et al. Electric-circuit-controlling device.

P. Lorillard Electric furnace for the continuous extraction of gine from its organization. Elevator safety device. A. Kampfe Elevator safety device. E. G. Wall Embossing press, Monogram. F. C. Scadding Engine speed regulator, Juternal-combustion Engine starting device, Internal-combustionS. T. Willis

Engines, Intake-manifold for explosive...

J. C. W. Van Blerek
Ensilage carrier.....O. Borgen
Envelop machine.....D. M. Lester
Excavating machine for digging and con-Fire-shutter controller. II. Drake
Fish hook. L. Date
Flower receptacle. C. R. Sanborn
Flush tank. S. A. Eyman
Fly-catching pistol. E. E. Hayden
Flying machine. II. J. Casanova
Fodding machine. S. Wheeler
Food for diabetics. E. Lampe
Forgiugs-handling apparatus

R. F. Devine
Form, Collapsible. P. Zucco
Fruit-handling device. J. A. Warner
Fruit-handling machine. J. A. Warner
Fruit-handling machine. J. A. Warner
Fuel system, Water-controlled. H. Lemp
Func-condensing apparatus

W. R. Hestlewood
Furnace. M. Ruthenburg
Furnace. J. H. Koons Furnace. W. R. Hestlewood
Furnace. M. Ruthenburg
Furnace. J. H. Koons
Furnace-charging apparatus, Blast. J. B. McKennan
Furnace-door mounting. G. H. Cushing
Furnace fire door, Boiler. G. de Grahl
Furnace for volatilizing zinc from its ores
H. H. Hundber Gas engine. O. J. Kirchen
Gas mautles, Manufacture of incandescent
I. Kreidl
Gas, Manufacture and distribution of.
T. J. Weber et al.
Gas meter. C. T. Pard
Gas producer. C. F. Miller
Gate. W. W. Nickell
Gate-register-actuating means.
P. T. Handiges
Gear-cutting machine. T. Fawcus et al.
Gear mechanism, Planetary. L. S. Clarke
Gearing. C. E. Henriod
Gearing, Variable-speed. W. S. Kindle
Glove, Bascball. B. T. Rogers
Glove, Bascball-fielder's. F. J. Ratsch
Governing mechanism. H. H. Cole
Governing mechanism. Emergency.
F. K. C. Boyd
Grading machine, Road.
Grain elevator. C. C. Strange et al.
Grate. J. Walp
Grate, Fire. E. Hall-Brown
Grease-cup filler. G. R. La Rue
Greenhouse construction.
O. W. and G. A. Heums
Grinding machine. H. B. Nichols
Grinding machine. H. B. Nichols
Grinding tool holder. C. S. Mason
Gun carriage. N. Koch
Hair pin or ornament. W. S. Bechtold
Hammock. J. D. and W. Palm Hair pin or ornament. W. S. Bechtold Hame housing. T. E. Blair Hammock. J. D. and W. Palm Harness-hitching device. J. W. Warren Harvester, Cotton. H. B. Byron Harvester, Grain. H. D. Schmidt Havvesting-machine caster-wheel. J. I. Moore Hawse-snubbing device. C. W. Littlefield Hay elevator. V. L. Ney Hay rack. P. Myrholm Heating apparatus. A. M. Lorentz Heating apparatus, Automatic regulator for Heating apparatus. A. M. Lorentz
Heating apparatus, Automatic regulator for
feeding fuel to. A. W. K. Pillings
Heddle frame. J. Kaufmann
Heel-building machine. G. B. Grover
Heel for shoes, Spring. J. S. Meacham
Hinge. J. Foster
Hinge. J. W. Shine
Hinge and cheek, Combined spring.

F. Brueker Hinge, Spring door. A. Falkenrath
Hoisting apparatus. A. E. Norris
Hoisting rigging. A. Olander
Horseshoe. J. McDermott

Horseshoe-forming machine....A. J. Range Maltage, Device for cooling air required for

E. Ott
Match-box attachment. W. H. Gamble
Match safe. J. R. Layton
Mansoleum. H. A. Blyth
Measuring and indicating sizes of tiles, &c.,
Electric apparatus for W. B. Updegraff
Melting furnace, Electric K. A. F. Hiorth
Mercantile recording apparatus.

A. N. Quidor
Mercury from poor ores by electrolysis,
Separating. B. Szilard
Metal base. M. C. Neuner et al,
Metal, Making expanded. H. Hill
Metal-strip joint. T. F. Martin
Metals, Cleaning. II. E. Genet
Milk cooler. J. F. Price
Milling machine. A. L. De Leeuw
Mining system, Coal. C. A. Cabell
Mold clamp, Snap. II. J. and T. H. Graf
Mop wringer. C. E. Vau Doorn
Mop-wringer and serub-brush holder, Counbined. W. Vernon
Motor control. J. F. Tritle
Motor-controlled switch. A. J. Barlow
Motor eontrolling device, Alternating-current. D. L. Lindquist
Motor decrick sleigh for loading logs.

W. S. Kennedy
Mower or harvester. H. L. Hopkins
Mowing machines, Swath-rod attachment
for. A. Barton
Muffler. J. A. and C. A. Xardel
Music, Machine for making perforated.

P. J. Meahl
Music sheet and tracker board, Perforated

Music, Machine for making perforated.

P. J. Meahl
Music sheet and tracker board, Perforated

W. S. Pain
Mnsical-instrument string. A. Zollinger
Nailing machine. C. W. Jackson
Necktie-fastening device. A. E. Halm
Negotiahle instrument

L. M. Todd
Net-lifting machine. J. Madlehner
Nicotin, Device for obviating the generation of. J. S. Huuter
Nozzle. F. B. Leopold Match-box attachment. . W. H. Gamble

Nozzle-adjusting device E. Efran Nurling device A. B. Campbell Nnt lock L. II. Dowell Nnt lock L. O. Hutson Oil burner, Crude C. Risley Oil burner, L. D. Light]
Nut lockL. II. Dowell]
Oil burner, Crude	
Oil-fed furnaceA. II. Light Opthalmometer and certain other sight-test- ing instrnmentsE. and C. S. Gowlland]
ore classifier	3
Ore concentrator and sliming table	-
Ore concentrator and sliming table. Ore separation, Dry	3
Oven, Combination	,
Oven-illuminating deviceT. Cascaden, Jr. Overhead washerI. J. Smith	3
Packing, MetallicC. O. Bnlock	,
Packing, RodP. Dorsey	
1	٠
Packings, Means for adjusting cylinder J. Harley	3
Padlock Keyless E Krajdocha	5
Pan remover. H. Armstrong	
Paper-folding machine	4
Packings, Means for adjusting cylinder J. Harley Padlock. E. H. Cosgrove Padlock, Keyless. E. Krajdocha Pan remover. H. Armstrong Paper fastener. W. Howard Paper-folding machine. II. Wollheim Paper-folding machine. J. B. Jensen Paper holder. B. F. Pectz et al. Patterns, Composition for. O. Nygren Peat into blocks. Machine for forming	:
Patterns, Composition forO. Nygren Peat into blocks, Machine for forming	;
Peat into blocks, Machine for forming W. L. Shepard et al. Perambulators, Rocking arrangement for.	- 5
Percolator cover	,
Percolator cover	
Perspiration absorbent l. Baskin et al. Phonograph G. H. Underhill Piano-playing attachments, Controlling device for R. W. Pain	
vice for R. W. Pain Piano, Pneumatic W. G. Betz	
Picture hanger. A. Lee Picture machines. Winding mechanism for	
moving	
nioving. A. Wiggins Pipe connection. P. Mneller Pipe conpling. J. N. Goodall Pipe ends to form spigot and socket joints.	,
Pipe ends to form spigot and socket joints.	2
Pitman for mowing machines, Yieldable	,
Apparatus for machiningT. Harden Pitman for mowing machines, Yieldable E. Bernstein Pivot mechanism, Antomatic gravity stop J. W. Yates Plastic substances, Manufacture of E. Linnekogel	,
Plastic substances, Manufacture of	,
Plate holder Magazine E. E. Thrasher	,
Plate holder, Magazine. E. E. Thrasher Platen press. J. Thomson Pliers, Cutting. G. S. Blake Pliers, Expansion. L. S. Starrett Plow and harrow, Combined. M. Hollis Plow harrow attachment. E. B. Barrows	;
Pliers, Expansion L. S. Starrett	;
Plow and harrow, CombinedM. Hollis Plow harrow attachmentE. B. Barrows	,
Plow harrow attachment . E. B. Barrows Plowing, pulverizing and cultivating ma- chine, Land J. Q. A. Newsom Police leader J. Malcolm Posts, Anchorage base for . P. T. Bailey Powder box E. V. Heins Press (2 pats.) J. Thomson Presser-foot mechanism . E. E. Winkley Presser-foot mechanism . E. E. Winkley	3
Police leader. J. Malcolm	,
Powder boxE. V. Heins	;
Press (2 pats.)	3
Pressing machines, Moisture collecting and	,
conducting device for	,
Frinting machine, Address. I. R. Hutchinson	3
Printing machine, TicketT. M. Vaughan Printing-plate-casting machine, Stereotype	,
Printing-plate-casting machine, Stercotype II. A. W. Wood Printing plates, Making, S. J. Kubel et al. Printing press (3 pats.)J. Thomson Printing pressC. B. Swink Pulley, BeltM. T. Bentley Pulley, Self-oilingA. W. Wigglesworth Pulley, Variable-speedW. B. Frisbie Pulverizer, LandO. A. Garwood Pulverizing apparatus, SoilC. R. Bradley Pump, High-pressure centrifugal	;
Printing press (3 pats.)J. Thomson	3
Pulley, Belt	;
Pulley, Variable-speed, W. B. Frisbie	,
Pulverizer, LandO. A. Garwood Pulverizing apparatus, Soil. C. R. Bradley	3
Pump, High-pressure centrifugal	,
Pump, High-pressure centrifugal	,
Pump valveJ. J. Ballard et al.	S
Punch, Paper-fasteningB. W. Hurd Punching and riveting machine, Combined	:
Durching and pirating packing Cambined	
Punching and Freeing in admine, Combined J. A. Talbot et al. Punching machine	
Rail adjustment, GuardE. M. Robinson	
Rail jointJ. W. Fey Rail jointJ. J. Kohn	
Rail joint J. Kolm Rail joint M. J. Kutsch Rail joint J. Wolfe Rail joint W. A. Miller Rail joint A. F. Coyne et al. Rail joint J. Kolm Rail joint J. Wolfe	1.
Rail jointW. A. Miller	٠
Railway bolt. J. F. Nicols Railway-gate-operating mechanism	3.
Railway-gate-operating mechanism	5
Railway signaling systemR. P. Tuttle Railway structureE. M. Boyuton	
Railway system, Electric. C. A. Huse et al.	
Railway tie. J. S. Butcher	1.
Railway tie and rail clamp, Combined	7
Rammer, Chain	r
Ratchet wrench	7
Razor stropE. Hunold	7
RefrigeratorW. G. Wilson	7
Railway-gate-operating mechanism	7
Refrigerator, WindowT. W. Barry Rendering apparatusC. E. Ord	7]
Resilient tread wheel. J. B. Adams Resilient wheel. H. R. Ellis Rivet, Bimetallic D. S. Hulfish	7
Rivet, BimetallicD. S. Hulfish	7
Road engine	1
Roads, Means for laying dnst and the like on and makingR. Hacking et al.	7
on and makingR. Hacking et al. Rock and ore crusher R. W. Traylor	7
Rock and ore ernsherB. W. Traylor Rolling mill (2 pats.)F. C. Biggett, Jr. Roofing fabrics, Vandrel for realing really	
Beauty	1
Roofing fabrics, Mandrel for reeling ready B. G. Casler Rotary engineW. and J. Birrell Rotary engineP. Glamzo	7

Determs intermalia a lantin a salar
Rotary internal-combustion engine
Rugs, pile fabrics, oriental carpets and similar textiles. Treatment of J. A. Boyajean Rule, Slide
Sash hanger P. Weingardt Sash lock L. Trafelet Saw set J. C. Milholland Scraper, Wheeled J. H. Gerrer Screw driver C. Bush Screw-power brake for vehicles
Scrubbing machineB. B. Heffelfinger Sealing bottles (Reissne)O. N. Tevander et al.
Scraper, WheeledJ. H. Gerrer Screw driverC. Bush Screw-power brake for vehicles Scrubbing machine. B. B. H. Heffelfinger Sealing bottles (Reissne) O. N. Tevander et al. Section breaker and insulator W. T. Carns et al. Serving tableE. B. Nora-Gon Sewage-disposal system. E. T. Welcome Shade bracketC. E. Wickliffe Shaft couplingI. Lehman Shears, punches, presses, &c. Holding-down
Shaft coupling. I. Lehman Shears, punches, presses, &c. Holding-down device for K. C. Gardner et al. Shipping box, Collapsible A. Sommerfeld
Shoes, Ornament or imitation buckle for
Sign (Reissne)
Shade bracket
Sleeping compartment, Open-air. J. Phillips Sleigh knee. F. A. Stenborg Small arms, Safety device for grenades projecting from. F. Denbler
Smelting furnace, Electric induction, K. A. F. Hiorth Smoking pipe
Snow-removing apparatus. L. Raschen Solar heat, Apparatus for utilizing
Soldering machine. J. Brenzinger Soles of shoes, Waterproofing. D. J. Murphy Sound reproducers, Diaphragm for. N. S. Wakefield Spark arrester. M. Mickelson Spark arrester. Schmidt
Sound reproducers, Diaphragm for
Spark arrester
Speed indicator. J. H. Capwell Speed indicator. A. B. Johnson Speed transmission mechanism, Variable. G. Cuthbert
Speed transmission mechanism, Variable,, G. Cuthbert Spigot, L. F. Eiden Spont, Pouring, P. Faure Spring-motion mechanism, Universal-parallel, C. R. S. J. Halle Square and bevel protractor, Combined,
Square and bevel protractor, Combined L. S. Starrett Square, Sct-off
Stapling machines, Wire feeding, straightening and cutting mechanism for
Stay bolt. B. E. D. Stafford Steam cugine (Reissuc) J. Stumpf Steam trap C. E. Squires Steel, Manufacture of W. R. Walker Stereotypes, Apparatus for casting curved
Stereotypes, Apparatus for casting curved C. E. Hopkins Stone-sawing machineF. S. Miskin Store-service apparatusJ. P. Nace Stove attachment, HeatingT. F. Hatton Stove, MagazineJ. B. Howard Stovepipe couplingN. T. Ljungberg Street indicator, Automatic
Stovepipe couplingN. T. Ljuugberg Street indicator, Automatic
Street indicator, Automatic
Switch-operating mechanism. A. B. Allen Switches, Locking mechanism for rotary snap electricJ. G. Peterson
Talking-machine diaphragms, Making
Terleaf-rolling machineS. C. Davidson Telephone exchange (2 pats.)N. E. Norstrom
Telephone exchange, Party-line
Test-leaf-rolling machineS. C. Davidson Telephone exchange (2 pats.)
Telephone system
arms of
Thread-cutting die and milling device, Combined
Telephoue-rent-collecting device
A. M. Moillet

T. W. Hire-bolt wrenchT. W. Hire. WheelJ. l.). Marvil
obacco-icat-stringing machine 'obacco pipe	W. Olds L. Noble
obacco pipe	Bastiau Iarconini Gillmor
'owel, RoilerF. Ingers 'rack brakeF. Ingers 'raction system, Electric.,O, E. l	Wheelev oll et al. ongsdorf
Transplanting pot	Kleeman . Russell is et al
Traction system, Electric, O. E. I. Transplanting pot	Wermuth
ruck, Car (2 pats.)J. Crick construction, Motor W. R. McF	. Barner Kean, Jr.
ruck, HandS. 1 'ugs to hames, Device for fastent S.	B. Browning J. Lutz
Tumbler washerJ. TurbineJ.	P. Nace Knight
urbine backet. E. W. urbine-bucket construction	Rice, Jr.
Curbine washer. J. Curbine bucket E. W. Curbine-bucket construction. E. W. Curbine-bucket structure A. S. Curbine-governing mechanism. C. Curbine-governing mechanism. Ela J. (Curbine-Steam (2 pats.) E. Virbines, Leakage-reducing decented.	Anderson E. Littie
'urbine-governing mechanism, Ela J. ('urbine, Steam (2 pats.)E. l	stic-tluid 1. Callan F. Edgar
'urbines, Leakage-reducing devenues, SteamO.	tice for Junggren Sackett
ypewriter for the blindJ. (ypewriter interchangeable platen	'. Heater
'urbines, Leakage-reducing deventer steam. On the steam of the steam o	P. Moore Treland
Typewriting machineW. G. Typewriting machineJ. C. Mc Typewriting machine	Dunham Laughlin E. Smith
ypewriting machineA. H. M. H. B. E. E. B. E.	Vorkman Sutlive
mbrella B. E. Imbrella stalf, Folding C. Inderreamer B. L. Indere Blow-off A. N. Anders Inder Blow-off A. N. Anders Inderes Inderes Inderes Index Blow-off Blow-off Index Inde	Peterson Sleeper
alve	dgkinson L. Barnes on et al.
Talve, Compression stop and wast alve, Float	e M. Kerst C. Elliott
tary	H. Clegg
Talve for oil tanks, AirJ. M. Malve for pneumatic cleaning systems. J.	ms, Wall T. Hope
Talve gear	ill et al. dumping-
M. M. and D. J. Mulvih 'alve-releasing mechanism for cars. J. M. 'alves from a distance, System for	Goodwin popening enkewitz
apor condenser	I. Hilger Pepple
chicle, Dumping	S. Clarke Gardner
Tehicle wheelC. M. Tehicles, Steerable front wheel of drivenP.	Backman f motor- Daimler
entilating system for factories, offices, &c	printing C. Zenke Wickes
oting machines, Grouping mecha	nism for Abbott
Vashing machine	Lichetti Pfeiffer
Vashing machine	J. Brudy ett et al. Ankrom
Vater heaterF. A. X Vater-level controllerF. be Vater-level regulatorJ. E. De	ieberding , A. Ray Bisschop
Vater wheel	Overfield Turner
VicelE. H. Copenhav Vicel traction attachment	er et al.
VhiffletreeW. Vindow and roof jackT.	M. Byrd B. Fry
Vindow gnardM. K Vindow screenH Vindow screen	leinegger . Harrild '. Morris
Vire connector	Y. Freier Smith
Fire retainer and insulator gnardG. W. Craw	ford, Jr.
Fire-stitching machine	n et al. echanism
Tripping machineE. C. A. Hi TreuchC. A. Hi	m et al. Northrup irtvigsen
alve-releasing mechanism for cars. J. M. Talves from a distance, System for and closing. E. R. apor condenser. G. M. antt. Burial. J. W. chicle, Dumping. C. chicle, Motor. L. Chicle suspension. J. K. chicle suspension. J. K. chicle wheel. C. M. chicles, Steerable front wheel of driven. P. centilating system for factories, offices, &c. H. folin-tuning peg. M. O oting machines, Grouping mechanics, Grouping machine J. Vashing machine. J. Vashing machine. G. G. Vashing machine. J. J. Vater-closet bend. H. D. Bartle Vater-closet bend. H. D. Bartle Vater-level controller. F. A. X. Vater-level controller. F. A. X. Vater-level regulator. J. E. De Vater wheel. W. G. Veeder, Rotary. W. R. Vheel. F. H. Copenhav Vheel traction attachment. Vindow gnard. M. K. Vindow gnard. M. K. Vindow gnard. M. K. Vindow screen. G. Vire connector. G. W. Craw Tire-stitching machine. L. G. Vire-trainer and insulator gnare G. W. Craw Tire-stitching machine. E. C. Crench. G. A. H. Trapping machine. E. C. Trench. C. A. H. Trist pins, Means for lubrication Titing by the blind, Device to to	of
J. K. (Friting by the blind, Device to the cores for the recovery of meta therefrom, Treating	acilitate 7. Frost
therefrom, TreatingH. H.	Hughes
ssued January 10,	1911.

1

MECHANICAL PATENTS.

Acetyl cellulose to enhance its elasticity and its power of absorption for dyestuffs. Treatment of E. Knoevenagel Acid. Apparatus for making sulfuric.

Acrial apparatus G. M. Fowler Aeroplane J. A. Goodwin Agitator J. A. McCaskell Air craft F. Brackett Air pressure, Means for automatically producing and utilizing H. E. Borger et al. Alloy. W. B. Driver

77
Amusement deviceL. W. Paber Anastigmatic objectiveC. Graf
Animal trap. J. Driu ko Antirattler and thill support. W. N. Themas Ash pan and detachable ball therefor.
Ash tom and detachable ball therefor
O. J. Mortenson Automatic regulator. E. C. Newcomb Automobile horn. G. Graf et al.
Automobile horn
Autopiano key lock
Bag-filling machine, ValveA. M. Bat- Bag frame
Bag frameC. Hiering et al. BaitA. R. Miller et al. Baking powder, Mannfacture and produc- tion ofB. Federer
tion of
Balling press. A. L. Stephenson Ball cage. E. C. Goodwin et al. Barrel-finishing machine. R. D. Kinyon Bearing. W. J. Brewer Bearing, Ball. L. Langhaar
Barrel-finishing machineR. D. Kinyon BearingW. J. Brewer
Bearing, BallL, Langhaar Bearing, RollerO, F, Zahn
Rearings Ball-holding care for hall
Bed, Extension F. D. Chapped Belt, Conveyer T. Roldins
Belt, Conveyer. 1. Roldis Belt, Suspender. 8. Neill
Belt, Suspender. S. Neill Berry-washing device. C. E. Loetzer Bicycle lock. L. H. Balwick Binder reel. E. Seibert Binding post, Electrical. W. Hector
Binder reelE. Seiberg Binding nost Electrical W. Hector
Bit
Bidding post, Electrical W. Hector Bit
Book, Account,
Bookbinding, Backing forG. Hager et al. Boring head
Boring tool. R. E. Dette Bottle cap, Milk. C. W. Molfenter Bottle closure. W. O. Swartz Bottle filler, Milk. L. W. Merriam Bottle, Non-refillable. R. Dehrenback Bottle, Non-refillable. 1. Takaes Bottle, washing machine. J. A. Prince
Bottle closureW. O. Swartz
Bottle, Non-refillableR. Dehrenback
Bottle, Non-refillable,,I. Takaes Bottle-washing machine,,J. A. Prince
Bottle-washing machine. J. A. Prince Box strap. Metallic. S. C. Cary Brewing fermented beverages, Compound for use in. L. Stein Brick machine. A. H. Olsen et al. Burglar alarm, Explosive. E. Reichenbach Button-making machine. F. M. Hopkins Cabinet Clothing. M. J. Freeman
for use in
Burglar alarm, Explosive. E. Reichenbach
Cabinet, Clothing
Can coverJ. B. Conover
Cap lifting and moving device
Can cover. J. B. Conover Canoe, Folding. A. A. Henrikson Cap lifting and moving device. H. F. Hitner Car-coupling safety appliance. R. E. Crowley
Car, Dump
Car, Dump. P. Bateman Car grain door. J. Henry Car grain door J. Archer
Car indicator, StreetS. W. Chick
Car register, Street. C. H. Hudson et al.
Car safety step. FreightA. C. Neale Car step. FoldingC. A. Lathrop
Car grain door. J. Henry Car grain door. J. Archer Car indicator, Street. S. W. Chick Car, Railway. W. J. Spangler Car register, Street. C. H. Hudson et al. Car safety step. Freight. A. C. Neale Car step, Folding. C. A. Lathrop Car wheel. C. N. Crouch Car-wheel gnard. F. E. Hutchings Car wheels, Making. J. H. Taylor Cars, Motor leads connection for street.
Car wheels, MakingJ. H. Taylor
Cars, Steering mechanism for road freight
Cars, Steering mechanism for road treight
Carbureter E. M. Barker Card, Button A. L. Currier Card for card systems, Extension
Card for card systems, Extension
Card for card systems, Extension
Cart brake, Logging P Johnson
Castings of precious metals, Mold for
Cellulose films, Continuous manufacture of
Cement, Bituminous paying, C. Richardson
Chair fan attachmentA. Rosenson Channel-flan-laving machine
Cement, Bituminous paving, C. Richardson Chair fan attachment. A. Rosenson Chaunel-flap-laying machine. J. B. Hadaway Checkrein attachment, II, G. Weathertil Cheese-handling apparatus. T. Christoffel
Cheese-handling apparatusT. Christoffel
Churn and butter worker, Combined
Chute, Combination dipping and loading
Chnck. J. A. Jarvis Chnrn and butter worker, Combined R. B. Disbrow Chute, Combination dipping and loading C. E. Townsen- Cigar-banding machine E. P. Sheldon Cigar-banding banding
Circuit. Loaded phantom
Circuit. Phantomed loadedT. Shaw
Clothes-line-prop attachment
Clutch W. H. Billings H. W. Winter
Clutch, FrictionE. E. Porter Clutch, FrictionP. B. Marfield
Clutch, Friction. J. W. Dearborn
Clutch mechanism for agricultural imple-
Clutch or clutch pulley, Rope, J. M. Boyd
Clutch-shifting mechanismF. B. Allen Coasting device for purposes of amusement
Cigar-banding machine. E. P. Sheldon Circuit. Loaded phantom. G. A. Campbell et al. Circuit. Phantomed loaded. T. Shaw Clevis. R. D. Hobbs Clothes-line-prop attachment. W. H. Billings Clutch. JI. W. Winter Clutch. Friction. E. E. Porter Clutch, Friction. P. B. Marfield Chitch, Friction. J. W. Dearborn Clutch mechanism. J. M. Schoonmaker, Jr. Clutch mechanism for agricultural implements. L. Willis Clutch or clutch pulley. Rope. J. M. Boyd Clutch-shifting mechanism. F. B. Allen Coasting device for purposes of ammsement . L. N. Moss Cock. Ball. O. H. Jones
Coil retainer, RotorA. J. Brown et al.
Coke and gas oven. L. Wilputte
Coke and gas ovenL. Wilputte Collar, HorseC. Ross Combination lock, Mechanical
combination lock, Mechanical
Tamburini
Composing-machine leading attachment F. H. Pierpont
Composing machine Pattern-controlled
Composing machine Pattern-controlled
Composing machine, Pattern-controlled R. C. Elliott Composing machine, Record-strip I. S. Bancroft et al.
Composing machine, Pattern-controlled
Composing machine, Pattern-controlled

Concrete mixer
Concrete mixerM. H. Reed Concrete structures, Reinforcing means for R. Anderson Conduit, High-pressureA. Drees Contact breaker for magneto-electric igniting apparatusG. A. Unterberg Contact making and breaking devices.
ing apparatusG. A. Unterberg Contact making and breaking deviceJ. Lundgreu Continuous kiln with traveling hearth
Converter, Rotary. J. L. Burnham Converter, Rotary. C. P. Steinmetz
Conveyer, PneumaticF. F. Wear Copying machine, Multiple
Converter, Rotary
Cotton-gin cleaner. G. D. Robertson et al. Couch, Bed. T. B. Laycock Couch, Extension T. B. Laycock
Cotton-bat former and compressor Cotton-gin cleaner, G. D. Robertson et al. Couch, Bed
Cuff. E. G. Johnson Cultivator attachment L. Sonier Cultivator attachment L. W. Stewart Curling-iron-heating apparatus. F. W. Dohm
Currency rack. J. E. Moss Currency-washing machine.
Currency rack. J. E. Moss Currency-washing machine F. B. Churchill Curtain holder. P. J. Taaffe Cushioning device. E. Favary Cnspider. P. Saci
Cutter head, ExpansionR. J. Tully Cutting machineT. G. Paddack Cutting machineL. Hirschfeld
Cushioning device. E. Favary Cnspidor P. Sagi Cutter head, Expansion R. J. Tully Cutting machine. T. G. Paddack Cutting machine. L. Hirschfeld Dental articulator P. A. Kennedy Dental impression tray J. A. Kowse Desk, Hygienic. U. Louis Die-holder safety device. C. W. Vaughn Differential mechanism (2 pats.)
Differential mechanism (2 pats.)
Dish-washing machineA. Panasci Dispensing apparatusR. G. Marsh Dispensing caseE. F. Hulbert
Die-holder safety deviceC. W. Vaughn Differential mechanism (2 pats.)
Ditch gate J. S. Cosden Door J. Brunzwick et al.
Door lock, RecordingL. C. Bush et al. Door-locking mechanism, Cell J. H. Van Dorn
Door or shutter, Self-closing, H. T. Moody Doubling or twisting machine yarn guideA. J. Hay
Downdraft furnace. W. H. James Drafting plate. J. A. Weidel Drawing mechine. C. I. Porry
Dowel joint
Driving apparatusL. E. Mitchell
Dye, Azo
Electric contact
Electric-fixture support, Self-centering J. A. Volk, Jr.
Electric contactA. Schweiger Electric devices, Operating vapor P. H. Thomas Electric-fixture support, Self-centering J. A. Volk, Jr. Electric heaterM. 11. Shoenberg Electric heating ironII. Vanderpool Electric igniterJ. Krannichfeldt Electric induction furnaceC. Grunwald Electric-light shadeC. C. Carpenter
Electric-light shadeC. C. Carpenter Electric meter (2 pats.)H. N. Atwood Electric motor, Alternating-current
Electric switch. P. T. McNally Electrical-distribution system (2 pats.)
Electric induction furnaceC. Grnnwald Electric-light shadeC. C. Carpenter Electric meter (2 pats.)H. N. Atwood Electric motor, Alternating-curreut II. S. Meyer Electric switchP. T. McNally Electrical-distribution system (2 pats.) J. W. Jepson Electrical oscillations, Vacuum discharge gap for producingH. F. Waite Electrical regenerative control apparatus and systemJ. C. Macfarlane et al. Electroplating apparatusM. Reid Electroplating apparatusM. Reid Electroplating apparatusS. S. Jacobsen Elevator deviceR. P. Lumley et al. Elevator interlocking mechanism J. S. Muckle Elevator safety deviceH. G. Hillman EngineJ. S. Savoie
and systemJ. C. Macfarlane et al. Electrolytic cellF. H. Briggs Electroplating apparatusM. Reid
Electropiating apparatus, S. Jacobsen Elevator device R. P. Lumley et al. Elevator interlocking mechanism
Elevator safety deviceH. G. Hillman EngineJ. Z. Savoie Engine leveling device, Traction
Engine
of hydrocarbonA. M. Walstrom EnvelopJ. Parbel Expansiou boltC. J. Clements
Explosive engine, Motor-vebicle
Engines. Means for facilitating the starting of hydrocarbon. A. M. Walstrom Envelop. J. Parbel Expansion bolt. C. J. Clements Explosive engine, Motor-vebicle. Extension table (2 pats.) E. Tyden Extension table. C. S. Burton Fabric-holding loop and clasp. C. W. Stimson Faucet, spigot and cock. W. A. Alexander Feed and litter carrier. W. F. Jacobs Felly and tire holder, Vehicle. R. S. Weehunt
Fence nost Concrete J Huber
Fertilizer distributerM. A. Stubbs
Filter
2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2

				_	1714	
Fireproofing for	safes	and	vault	door	's	
Fish cleauer		• • • • • •	J.	. W.	Davis Munn	
Cish-cleaning ma Eishing rod	ichin	e	$C_{\widetilde{C}}$. W. Ц. Ц	Eddy Ianson	
Float gage Flooring clamp.		· · · · · · ·	F.	L. 1 [. G.	Joues J	
Fly trap Fly trap	• • • • •		j.	. N. G. 1	Jones	
Fireproofing for Fish cleauer Fish-cleaning ma Fishing rod Float gage Flooring clamp. Fly trap. Fly trap. Fooding table Foods, Machine Foot, Artificial. Formation of an to another ar Frame bodies, A	for i	mpreg	C. uatiug	T, I	ek	
Foot, Artificial.		J	е Н	$W_{\rm appl}$	oodiett Karn	
to another ar	arti ticle. Lacki	cie an	d its	appi R. K	roedel	
Fruit-preparing	1110111	ue for	r.	J. N	Iueiler	
Fuse, Electric-c	ircuit	reue	wable	ν 	Smyth	
Garbage cremate	ory.	nats)	. O. Ž	i. si	nanuon Ratts	
Garment hook	r det	achah	T. J. le pa	Bro	owning	
Fuse, Electrice Garbage cremate Garment hanger Garment interio Gas burners, Budescent. Gas-cleaning applas fixture. Gas generator. Gas-manufacturi			.L. F	V. T Kı	. Stall	
Gas burners, Bu descent	rner	mouth	ipiece G.	for Schu	incan- ichardt	
Gas-cleaning app Gas fixture	parat	usW	. W.	Gore W. I	e et al. Lumley	
Gas generator Gas generator			Il	[. Ві П. G	osseau Fraham	
Gas-manufacturi	ug aj	pparat •••••	us, Pi G.	rodu C.	cer Carson	
Gas producer Gases, Removing	g del	cteriou	(ls	Я. Р.	Davis	
Gate			Р. Н. Е	н. Т Вг	Thomas ummel	
Gate Gear, Transmiss	ion.	• • • • • •	¢	. M.	Leech	
Gearing Gearing	R.	К. І	le Bl	ause ond	et al.	
Gearing, Lathe.	8.0	R. K.	Le I	lond	et al.	
Gearing, Eathe. Gearing, Rovers Gearing Speed-t	ing	I I	E. E.	Rose	ewarne Hering	
Glass setting, P Governor safety	late.	W. liance	R. Gr Eng	issel	et al.	
Grate, Fire			.н. І	i. Re J. N	ockwell I. Cail	
Grate structure. Grates, Air-feed	iug a	J. 1 ittach:	R. Forment	tune for.	et al.	
Grenade			∴.F. ∴E.	Hil B. I	lburger Babbitt	
Grinder, Portab Grinder, Saw	le		E.	ii. S	Scott	
Grinding and po	olishi · · ; · ·	ng me	etallic	ball . Ri	ls, Ma- ngland	
Grinding aud &c., Apparatu Crinding blodes	polisi s for	W.	tubula G. Ha	ır a ılsey	rticles,	
Grinding brades,		····	R	. T.	Winn	
Gas generator. Gas producer. Gases, Removing Gate. Gate. Gate. Gate. Gate. Gearing. Gearing. Gearing. Gearing. Gearing. Gearing. Gearing. Gearing. Grate. Gra		nats.)	. W.	B. X	litchell	
Harvesting, bin	ding	and	E. Pi shock	irdy ing	et al. device,	
Corn Harvesting mac	biue,	Coru		.N.	Wilson	
Hay and other	sin	 nilar	H, F. carrie	$_{\mathrm{rs,}}^{\mathrm{En}_{i}}$	gelland Switch	
track for Hay-handling m	echa	nism		II.	Jacobs Madsen	
Headlight, Diri: Headlight, bifti	gible.	oabani	14.	M.	Mayo	
Heater	· · · · ·	•••••	L. C.	Au	nberson	
Heel Detachab	nachi le	ne	. Е. А	A. V	Vebster tlehner	
Hinge, Spring Holding and cen	terin	 g app:	ratns	E. B	oumer	
Horse releaser.			.R. (). Re L.	obinson Taylor	
Horseshoe Horseshoe attae	hmer	 it	E.	F. B . R.	rannon Hatch	
Horseshoe nail. Hose holder		i	i. J.	А. М. Т	Moller Ioward	
Hot-water holde Hub. Resilient	r whee	В. 1	. A. I .II. L	ean: . Mo	s et al. cDuffee	
Humidifier or sp	ray I	produc	er T.	win	stanley	
Holding and cen Horse releaser Horseshoe attace Horseshoe nail. Hose holder Hot-water holde Hub, Resilient Humidifier or sp Hee-cream freez J. I Illuminating in Incandescent bu Incubating apparail Indexes and the card	er D. an	id C.	Е. В	utler	et al.	
Inconduceent lu	ou un	H.	T. M	arti	n et al.	
Incubating apparagnments	ratu	S	.W. 1	E. M G. H	laynard L. Stahl	
Indexes and the	like,	Rod-l	ockin	g der G	vice for . Mott	
Ink fountain			. U. U	l. 166	aymond -	
Insectide holder Insole, Shoe				L. D.	S. Hill Austin	
Insulating cover	r for	electr	ic sw	$\mathrm{M}.$	Guett	
Inking machine, Insectide holder Insole, Shoe Insulating cover Insulating truber Insulating truber Intercepting trainternal-combus Internal-combus Iron ore, Reductioning board Jar holder a fabrics	s, Fo knob	rming	<u>II</u>	H.	Dupont	
intercepting tra Internal-combus	p tion	engin	W.	T.	Duncan	
Internal-combus	tiou	engine	$\mathbf{T}_{\mathbf{D}}^{\mathbf{T}}$	0-676 0-676	ermans ele	
Iron ore, Reduc	eing.			J. T	Jones Koba	
Jar holder Knife-holder	nd l	nife	.0. I	F. P	eterson	
Knitted fabric	Proc	lucing	onen	work		
Knitting machi	ne fo	r loon	ed fal	ries	. Scott Circu-	
Knitting machinar	ines,	Drop	stitcl	J. H	I. Scott d lace-	
work mechan Knockdown box	ism	for cir	cular £	N	Ames	
Lamn			K.	н.	welles	
Lamp burner.	tic a	rc	j.	N. E	. Sailer Iodgson	

Lamp socket, Cluster (2 pats.)
Lamp socket, ElectricR. B. Benjamin Lamp socket, Wcatherproof plural
Land rollerR. B. Benjamin Land rollerN. Durbin Land rollerD. O. Martin
Lamp socket, Cluster (2 pats.)
Latbe-relieving attachment. R. K. Le Blond et al.
Leaks, Composition for stopping
Ledger construction, Loose-leaf
Lemon juice, Treatment ofA. Fernbach Letter record, RegisteredH. M. Moore Level. SpiritL. C. Willer
Lever handle
Life-saving sled. E. H. Barney Lime and fertilizer distributer. P.
Liquid-fuel adjustable burnerE. Rossi Liquid-fuel burnerW. A. Wallace et al.
Liquid heater
Liquids from gases or vapors, Apparatus for the separation ofO. Buhring LockW. Meier
Locking device, Auxiliary
Loom-controlling mechanism
for the separation of. O. Buhring Lock. W. Meier Locking device, Auxiliary. C. E. Blechschmidt Locomotive. G. H. Emerson Loom-controlling mechanism. Loom-filling-exhaustion-indicating mechanism. A. E. Rhoades Loom picker check. W. M. Barber Lunch receptacle, Sanitary. F. Haerter et al. Magnetic separator. A. Kuhn Mail-stamping mechanism. C. Lankhuff Manure loader. W. F. and J. C. Bohling Match-box attachment for headwear.
F. Haerter et al. Magnetic separator. A. Kuhn Mail stamping meshanian A. Lenkhuff
Manure loaderW. F. and J. C. Bohling Match-box attachment for headwear
Measurements by means of flowing liquid, Device for makingM. Arndt
Measuring areas by means of electric-resistance coils, Apparatus forJ. J. Gotz Measuring deviceT. M. House
Measurements by means of flowing liquid, Device for makingM. Arndt Measuring areas by means of electric-resistance coils, Apparatus forJ. J. Gotz Measuring deviceT. M. House Measuring device, DressN. E. Jaeger Metal rolls, Machine for cuttingG. Knaus Metallic articles, TreatingT. B. Allen Metallic compounds. Separating.
A McKachnia et al
Micrometer gageL. Scusa Mine explosions, PreventingJ. W. Coleman Mine-roof supportJ. G. Sanderson et al. Mining bitW. W. and E. G. Bittenbender
Mining bit. W. W. and E. G. Bittenbender Mining coal. H. A. Kubn
Mining tool
Motoreveles Spring-cushion fork structure
Music holder E. S. Stem et al.
Music-leaf turnerW. W. Duck Music-perforating machine, SheetJ. F. White Musical instrumentF. G. Gasche
Music-perforating machine, Sheet
Necktie retainer. W. F. Jacobs Neckle-threading device. M. Shoenfeld Wishle Vividia (M. Shoenfeld
Nozzle. C. M. Symonds Nut lock. W. Farman
Nut lock. C. B. Lamb Nut lock. D. Smith Nut lock. F. P. Harman Oar, Bow-facing. R. Behr Oar lock. C. F. Aydelott Oar lock. C. A. Livingston Oil burner. H. J. Hennings Oiler and waxer, Floor. A. McCauley Oiler, Automatic flange. W. A. Noble Oiler, Die-stock. M. E. Johnson Opera chair (2 pals.). A. Wanner, Jr. Orchard-heating device. F. Stapp Ordnance A-tube or liner. H. Maxim Ores, Apparatus for classifying and concentrating. R. E. Trottier
Oar, Bow-facing R. Behr Oar lock C. F. Aydelott Oar lock C. A. Livingston
Oil burner
Oiler, Die-stock
Ordnance A-tube or liner II. Maxim Ores, Apparatus for classifying and concen- trating
Oven, Steam-pipe
Oxygen, Device for generating and administering
Packets into sliding trays and boxes, Ma- chinery for introducing inclosed E. L. Bracy
Paper box, FoldingR. B. Du val Paper, Machine for feeding and delivering sheets ofA. F. Dawes et al.
Paper perforator, WallT. J. Nash Pasteurizer equipmentT. H. J. Paul Pawl-and-rack mechanism for couches
chinery for introducing inclosed. E. L. Bracy Paper box, Folding
Pendent switch, Two-button
Photographic apparatus, Trichromatic
Photographic developing tankJ. E. Thornton
Photographic-printing machine
Producing coloredF. E. Ives Piano, PneumaticW. G. Betz Picture hanger, AdjustableC. F. Held
Pile-cutting machine A. Morton Piling section, Steel S. B. Sheldon Pin package L. J. Downing

Fireproofing for safes and vault doors J. E. Davis		Pipe-hanger couplingJ. H. Postel Pipes, Device for removing excreseences
Fish cleauer	Lamp socket, ElectricR. B. Benjamin Lamp socket, Wcatherproof plural	from
Fishing rod. C. H. Hanson Float gage. F. L. Lander		Planter, SeedE. M. Dowdy Plastic block and earthenware apparatus
Flooring clamp. J. G. Joues Fly trap. T. N. Jones	Land roller	F. H. Howard
Fly trapJ. G. Monens	Lantern, TubularC. T. Whipple et al. Lantern, TubularC. T. Whipple et al.	Plow jointer L. Livermore
Foods, Machine for impregnating stock	Lathe	Plnmes, Container for ostrich
Foot, ArtificialH. W. Karn	Leaks, Composition for stopping	Poke, CattleC. F. Schepmann Polishing mittenW. R. Hollingshead
Formation of an article and its application to another article	Leather board, MakingA. L. Clapp	Pool table
Frame bodies, Machine for makingJ. Mueller	Ledger construction, Loose-leaf	Powdery materials, Apparatus for handling and packingF. J. Heybach
	LeggingI. Piles Lemon juice, Treatment ofA. Fernbach	Power-transmission deviceL. B. May PressF. J. Perkins
Garbage crematoryO. M. Shanuon	Letter record, RegisteredII. M. Moore Level, SpiritL. C. Miller	Pressure generator, Internal-combustion E. C. Warren
Garment hanger (2 pats.)J. T. Batts Garmeut hookT. J. Browning	Lever handle	Printing press,A. T. H. Brower Printing press, EmbossedF. W. Wood
Garment interior detachable pad	Lid-fastening deviceR. B. Goodrich Life-saving sledE. H. Barney	Propeller, AerialT. Fahey Pulley, DriveL. Torgerson
Gas burnerL. F. Knoderer Gas burners, Burner mouthpiece for incan-	Lime and fertilizer distributer E. M. Bickerstaff	Pulp, Manufacturing fiberC. L. Weiberg Pulp-straining vat, MetalL. A. Dietrick
descent	Liquid-fuel adjustable burnerE. Rossi Liquid-fuel burnerW. A. Wallace et al.	PulverizerR. Luckenbach Pulverizing rollE. E. Porter
Gas fixture	Liquid heater	Pnmp, CentrifngalR. O. Jones
Gas generator	Liquid trapE. C. Worns Liquids from gases or vapors, Apparatus	Pnmp, Centrifugal water-lifting
Gas producerG. C. Carson Gas producerG. P. Davis	for the separation ofO. Buhring Lock	Pump saud trapR. Courader PurifierT. M. Coyle
Gases, Removing deleteriousP. II. Thomas	Locking device, Auxiliary	Quilting frameJ. C. A. Gehm RadiatorG. M. Aylsworth
GateH. E. Brummel GateN. Durbin	Locomotive	Radiator connectionH. W. Armstrong Radiator, Steam or hot-water
Gear, Transmission	Loom-filliug-exhaustion-indicating mechan-	Rail anticreeping device (2 pats.)
GearingR. K. Le Blond et al. Gear, BeltC. D. Rice	ism	Rail fastener
Gearing, LatheR. K. Le Blond et al.	Lunch receptacle, Sanitary	Rail joint. J. W. Stepheus Railway bond wires.
Gearing, Lathe. &c. R. K. Le Blond et al. Gearing, ReversingR. E. Rosewarne	Magnetic separator. A. Kubn	J. B. Richardson et al.
Gearing, Speed-trausmissionC. W. Hering Glass setting, PlateW. R. Grissel et al.	Mail-stamping mechanismC. Lankhuff Manure loaderW. F. and J. C. Bohling	Railway frogJ. G. Sullivan Railway-track structureF. J. Reddick
Governor safety appliance, Engine	Match-box attachment for headwear	Railway tracks, Means for leveling and finishing surfaces of ballasted (Reissue)
Grate, FireJ. M. Cail Grate structureJ. R. Fortune et al.	Measurements by means of flowing liquid, Device for making	Raising and lowering deviceT. S. Cafferty
Grates, Air-feeding attachment for F. Hilburger	Measuring areas by means of electric-resistance coils, Apparatus forJ. J. Gotz	Rauge aud water heater, Combined
GrenadeE. B. Babbitt Grinder, PortableA. Scott	Measuring device,	Ratchet-pawl-releasing mechanism
Grinder, SawE. H. Sterling Grinding and polishing metallic balls, Ma-	Metal rolls, Machine for cuttingG. Knaus Metallic articles, TreatingT. B. Allen	Reamer
chine for	Metallic compounds, Separating	Reaming bitC. M. and J. H. Schwartz Reaper, FloatingE. Ferriss
&c., Apparatus forW. G. Halsey et al. Grinding blades, Apparatus for	Micrometer gageL. Scusa Mine explosions, Preventing	Receptacle
R. T. Winn Guu R. Hazelrigg	Mine-roof supportJ. G. Sanderson et al.	Records pertaining to car movements, Means for making, collating and auditing
Harrow	Mining bitW. W. and E. G. Bittenbender Mining coal	Reflector and search lightS. L. Lebby
	Mining tool. J. Pollock Mold. W. D. Harrell	Reflector socketR. B. Benjamin RefrigeratorW. G. Wilson
Corn	Molds, Jolt-rammingE. H. Mumford Motor-controlling apparatus, Electric	RefrigeratorF. V. Detwiler Fefuse burner'.J. R. Fortune et al.
II. F. Engelland	H. W. Leonard	Registering mechanism for folding-machines, &c
Hay and other similar carriers, Switch track for	Motorcycles, Spring-cushion fork structure forF. H. Pommer Music holderE. S. Stem et al.	Resilient wheelO. H. Anderson Resilient wheelO. H. Anderson
Hay-handling mechanismM. H. Madsen Headlight (2 pats.)R. H. Welles	Music-leaf turner	Revolver holsterF. R. Lewis
Headlight, Dirigible	Music-perforating machine, Sheet	Revolving stand tableS. Cantrell RheostatC. D. Kestner Rings, Machine for rolling fluger
L. C. Amberson Heater H. Anderson	Musical instrument, F. G. Gasche Musical instrumeut, Stringed	H. Henrich
Heel-breasting machineE. A. Webster Heel, DetachableA. Mitlehuer	Nail setW. H. De Wick Nail setJ. H. Genuit	Rock drill
Hinge, SpringE. Boumer Holding and centering apparatus	Necktie retainer	Roofing cleat. J. H. Bell Rotary engine. M. A. Dooley
R. C. Robinson Horse releaserR. L. Taylor	Nipple, NursingW. M. Decker NozzleC. M. Symonds	Rubber fabric
Horseshoe E. F. Brannon Horseshoe attachment F. R. Hatch	Nut lock	Rule and protractor, Combined
Horseshoe nailA. Moller Hose holderH. J. M. Howard	Nut lock	Sad-iron pattern
Hot-water holderB. A. Deans et al. Hub. Resilient wheel H. L. McDuffee	Oar, Bow-facingR. Behr Oar lockC. F. Aydelott	Sad iron, Self-heatingW. W. Lewin Safety deviceH. G. Hillman
Humidifier or spray producer	Onr lock. C. A. Livingston Oil burner. H. J. Hennings	Salt shaker
Ice-cream freezer	Oiler and waxer, FloorA. McCauley Oiler, Automatic flangeW. A. Noble	Sash, MetalG. H. Forsyth Sash, WindowF. M. Brown
Illuminating instrument	Oiler, Die-stock	Saw guide, BandR. Whitaker Saw handleC. M. Minton
Incandescent bulbs, Husk for W. Lumley Incubating apparatus W. E. Maynard	Orchard-heating device. F. Stapp Ordnance A-tube or liner. II. Maxim	Saw-table frameG. L. Knights Saw viseJ. B. Atkinson
Incubator heater	Ores, Apparatus for classifying and concentrating. R. E. Trottier	Sawmill, LogA. S. Froslid Scaffold, HangingC. M. Haynes
Indexes and the like, Rod-locking device for card	Oven, Steam-pipe	Scale, ComputingR. D. H. Anderson Scraper, PipeR. B. Lawrence, Jr.
Ink fountain	for generating pureR. Moritz Oxygen, Device for generating and admin-	Scraper or grader, Surface. L. M. Linder Screw-driver. W. B. Lane
Insectide holderL. S. Hill Insole, ShoeD. Austin	istering	Screw heads, Means for preventing frictional drag on rotatingG. E. Rogers
Insulating cover for electric switches M. Guett	Packets into sliding trays and boxes, Machinery for introducing inclosed	Screws, Apparatus for making multiple- threaded wood
Insulating tubes, FormingW. R. Seigle Insulator, Split-knobH. H. Dupont	Paper box, Folding. R. B. Du Val	Scrubbing device, FloorW. H. Strange
Intercepting trap	Paper, Machine for feeding and delivering sheets ofA. F. Dawes et al.	Sealing head for applying jar caps or closuresE. D. Schmitt
Internal-combustion engine, Two-cycle	Paper perforator, WallT. J. Nash Pastourizer equipmentT. H. J. Paul	Seeder, FruitT. H. Elliott Service and valve box, Water and gas
D. I. Twitchell Iron ore, ReducingJ. T. Jones	Pawl-and-rack mechanism for couches T. B. Laycock	Severing mechanismR. B. Craig et al.
Ironing boardR. L. Kohr Jar holderO. F. Peterson	Pen. FonntainF. M. Ashley PenholderJ. A. Baldwiu	Sewage, refuse or the like, Machine for treatingA. Martin et al.
Knife-holder and knife for cutting pile fabrics	Pendent switch, Two-buttonF. C. De Reamer	Sewing machine thread-lock and take-up
Knitted fabric, Producing openworkR. W. Scott	Perforating and winding machine, Strip F. H. Pierpont	Shade or reflectorG. L. Kraatz Shampoo shieldD. Nelson
Knitting machine for looped fabrics, CircularJ. H. Scott	Photographic apparatus, Trichromatic F. E. Ives	Shearing machineA. S. Beauchamp ShearsE. S. G. Lewis
Knitting machines, Drop-stitch and lace- work mechanism for circular	Photographic developing tankJ. E. Thornton	Shoe, Rubber-soleH. O'Sullivan Shot firer, ChemicalJ. Dowd
	Enormon	
Knockdown boxC. F. Jenkins	Photographic-printing machine	Show cases, Sliding door for. A. E. Shaner Sign for windows, CurtainJ. H. Fitch
Knockdown boxC. F. Jenkins Lamp. R. H. Welles Lamp. Automatic arcE. Sailer	Photographic-printing machineW. J. Harris Photographic prints in graduated relief, Producing coloredF. E. Ives	Sign for windows, CurtainJ. H. Fitch Sign, IlluminatedC. A. McNeal SilencerJ. M. Miller
Knockdown boxC. F. Jenkins LampR. H. Welles Lamp, Automatic arcE. Sailer Lamp burnerJ. N. Hodgson Lamp closuer ArcL. Winfeler	Photographic-printing machine	Sign for windows, CurtainJ. H. Fitch Sign, IlluminatedJ. M. Miller Silk or warp in a single operation, Apparatus for preparingP. Saracco
Knockdown box. C. F. Jenkins Lamp. R. H. Welles Lamp dutomatic arc. E. Sailer Lamp burner. J. N. Hodgson Lamp cleaner, Arc. L. Wipfeler Lamp Electric-arc. J. T. H. Dempster Lamp holder. T. B. Monosmith	Photographic-printing machine	Sign for windows, CurtainJ. H. Fitch Sign, IlluminatedC. A. McNeal SilencerJ. M. Miller Silk or warp in a single operation, Apparatus for preparingP. Saracco Slab or block composed of cement and wirenettingS. von Medveczky
Knockdown boxC. F. Jenkins LampR. H. Welles Lamp, Automatic arcE. Sailer Lamp burnerJ. N. Hodgson Lamp closuer ArcL. Winfeler	Photographic-printing machine	Sign for windows, CurtainJ. H. Fitch Sign, IlluminatedC. A. McNeal SilencerJ. M. Miller Silk or warp in a single operation, Apparatus for preparingP. Saracco Slab or block composed of cement and wire-

THE INVENTIVE AGE.

Speed indicator (Reissue)R. Speed regulator, AutomobileA. Spinning-machine top roll. W. G. Spring wheelR. Graham-V	Shipman B. Griep Ragsdale	7
Stamp-affixing device C	L. Peters	7
Stamp box	r. Fraser ting and iel et al.	7
Steam rollerJ. E. F Steam-generating apparatusW. B. I	ernstrum Iammond	1
Stamp box. II. Stamps, &c., Machine for conn checking. P. G. E. Dan Steam roller. J. E. F. Steam-generating apparatus. W. B. I. Steam-generating apparatus. E. C. Steam or other vapors, Apparatus erating (2 pats.). E. C. Steel, Carhonizing. II. Steel sheavs. I. W. Steel, Unmagnetizable. F. Steering apparatus. H. Stone gatherer. W. P. I. Stovepipe holder. Stovepipe tbimble for wall flues. P. E. Steen Poor Stovepipe tbimble for wall flues.	Newcomb for gen-	
erating (2 pats.)E. C. Steel, CarhonizingH. Steel shearsI. W	Newcomb Rodman L. Chenev	1
Steel, UnmagnetizableF. Steering apparatus	Kohlhaas . J. Hert Llewellvn	7
Stovepipe holderstovepipe tbimble for wall flues	G. Lec	1
Strainer, SinkII. Suction cleanerT. B. Hat Surfacing machine	Matthews ch et al. J. Bein	7
Stovepipe tbimble for wall flues Strainer, Sink	. Calvert E. Keller	1
Table lock, Pedestal-extension Tag-making machine S. B. Sen	nbrnecher E. Tydeu ton et al.	1
Tail stock	I. Hjorth ill et al.	7
Teat enp	.D. Kleiu	7
Telephone trunking system A. The system of the syste	O. Rugh H. Dyson	1
Thresher feederJ. Threshing-machine feeding device	J. Heser	7
Ticket-holding case	Stinson P. Byrnes	7
Tire armor. R. G. Tire, Cushion. J. A.	Dunwody Mollitor	2
Tire-enshining deviceE Tire demountable rim, Vehicle-wlJ. G. and J. G. Hoo	neellgson, Jr.	
Telephone and telegraph system. A. Telephone trunking system. A. Conthresher feeder. J. Thresher feeder. J. Threshing-machine feeding device. T. E. Ticket-holding case. A. Tie plate. C. I. Tile machine, Power. H. and J. I. Tire armor. R. G. Tire conshion. J. A. Tire-enshioning device. E. Tire demountable rim, Vehicle-wl. J. G. and J. G. Hoo. J. G. and J. G. Hoo. Tire fastener. J. W. Tire, Pneumatic. J. M. Tire, Pneumatic. J. M. Tire, Pneumatic. J. M. Tire protector, Storage. B. S. Tire protector, Storage. B. S.	lgson, Jr. Farnoff	
Tire, PneumaticJ. Marire protector, StorageB. S.	. Kraster acDonnell Westcott	2
hicle wheels, Demonstable resili	ent	
Tobacco can and receptacle	oacco-pipe .A. Falk	Ā
Tobacco pipe	H. Bray Harridge L. Owen	1
Tool and tool holder	I. Morris I. J. Jenks W. Cauty	A
Torpedo, AerialJ. V. Torpedo, Dirigible aerialJ. V. Trace holderJ. W.	V. Currell V. Currell Meredith	Î
Transmission mechanism. P. Menz Transparencies, PreparingC. A.	deKinney zies et al. Bigelow	ž Ž
Tobacco can and receptacle	eler et al. W. Scott	i i
Tripping mechanism. Trolley-boom swinger, Coal-tower H. Trolley-boom swinger, Coal-tower H. Trolley-track safety-switch C. Truck and fodder binder, Huskin W. S. Truck, Elevating W. H. T. Tubes and rods, Straightening J. B. Tug hook H. D. Turbine W. Turbine J. H. Turbine J. H. Turbine J. H. Type-casting machine R. P. Li Type-machine die-case equipment M. C. Inda Type-machine matrix. M. C. Inda Type-matrix-side-grooving machine Type-matrix-side-grooving machine J. S. Bancr Type mold M. C. Inda Type-mold equipment, Low-quad. A. I. Typesetting machine J. Typewriter H. D. Typewriter attachment C. G. Typewriting machine E. J. Typewriting machine B. C. Typewriting machine B. C. Typewriting-machine platen-lock Undercutter J. W. Undercutter J. W. Undercramer E. C. Curiversal joint G. B.	L. Cross M. Ayres	i i
Trnck, ElevatingW. H. T Tubes and rods, Straightening	Hunner Chornburg	
Tug hookH. D. TurbineW. TurbineJ. H.	Odegard E. Snow Corthesy	Í
TurbineJ. I Type-casting machineR. P. Li Type-machine die-case equipment	I. Rivers nk et al.	I I
Type-machine matrix. M. C. Inda Type-matrix-side-grooving machine	hl et al. hl et al.	I
Type moldM. C. Inda Type-mold equipment, Low-quad.	oft et al.	I
Typesetting machineJ. TypewriterH. D.	Hummel Robinson	I
Typewriting machine	Shechan Stickney	I
Typewriting machineC. P Typewriting-machine platen-lock	N. Crabb	I
UndercutterJ. W. UnderreamerE. C Universal jointG. B	Donahue Wilson Kinsler	F
Vacuum apparatusP. H. Vacuum cleaning apparatusP. Vacuum drying apparatusE. W	Thomas C. Little . Strohn	I
Undercutter. J. W. Underreamer. E. C. Universal joint. G. B. Vacuum apparatus. P. H. Vacuum cleaning apparatus. P. Vacuum drying apparatus. E. W. Vacuum drying apparatus. L. W. Vacuum-producing means. P. H. Valve-action for explosive engines E. S.	Treichler Thomas	I
Valve, Automatic timeF. S.	Hutchins Pobinson	F
other fluidsH. V Valve, FlushingW. G. M	Cornell eller, Jr.	$_{\mathrm{B}}^{\mathrm{I}}$
Valve for water gages Automatic	Edwards	Γ
Valve for water heaters, Automati	н, вгау с Е. Кау	B
Valve mechanism for water colum	ns Anderson	P P P
Valve, Rotary	W. Hoyt ns Thomas	P

Varnish and impregnation and insulation
substance and its production
Vehicle dump bed. D. W. Carr Vehicle fender, Motor. R. N. Harris
Vehicle fender Motor R V Harris
Vehicle running gear
Vehicle running gear. A. A. Merrill Vehicle top
Vehicle, Under-water. S. Z. de Ferrauti Wagon brakeJ. F. Jackson et al.
Wagon brakeJ. F. Jackson et al.
Wagon brake, AutomaticO. Syverson
Wagon, DumpE. Ledford
Wagon, Dumping
water-closet and other bowls, Device for
Water fountain (Reisene) R Kamingky
Water heater. J. Schlosser
Water heater, Electric,, H. A. Burns
Water heater. J. Schlosser Water heater, Electric. H. A. Burns Water lift. J. E. Osmer
Water motorR. Ames
Water motor. R. Ames Water-tube boiler. J. L. Butler et al. Weather strip. C. R. Hammell Weed exterminator. G. E. Whitney
Weather stripC. R. Hammeil
Weed exterminatorG. E. Whitney
weeder and cultivator
Weeder and cultivator
Wheel
Wheel
Wheel demountable rimJ. W. Farnoff
Wheel-holding device, SpareJ. II. Hall
Whip core
Wind motor A. Norman Windmill G. E. Feldner Winding machine R. W. Barker
Windmill
Window frame and such T Sandargard
Window lock W H Hooper
Window-operating device S. A. Lanning
Window-panc fastenerJ. Graef
Wire clampW. L. Holladay et al.
Winding machine. R. W. Barker Window frame and sash. T. Sondergard Window lock. W. H. Hooper Window-operating device. S. A. Lanning Window-pane fastener. J. Graef Wire clamp. W. L. Holladay et al. Wire stretcher. G. Scroggie Wire-twisting device. D. W. Marshall
Wire-twisting deviceD. W. Marshall
Woodwork and flooring, Machine for treating interior
ing interior
Wool washing machine F. C. Sargent
Work bench A W Bichards
Work holder
Wrench. J. F. Wright
WrenchR. J. Bomblatus et al.
ming interior. C. Il Comstock Wool, Scouring P. Schmid Wool-washing machine . F. G. Sargent Work bench A. W. Richards Work holder . J. A. De Bord Wrench J. F. Wright Wrench . R. J. Bomblatus et al. X-ray apparatus . W. S. Fnllevton
Issued January 17, 1911.

MECHANICAL PATENTS.

Liquefaction of ... G. Claude
Air-brake coupling, Automatic ... T. E. Jennings
Airship ... J. M. Keller
Alrship ... E. L. Madden Axis indicator......G. A. Bader Axles, Forming railway-car, T. H. Simpson Axis indicator. G. A. Bader Axles. Forming railway-cav. T. H. Simpson Babhitt material. J. L. Jones Badge. J. E. Henry Bag fastener. W. Greene Bag holder. M. E. Hall Baking pan. F. P. Thieu Baling press. F. Gill et al. Bearing and bearing box. E. R. Whitney Bearing, Antifriction. E. S. Woods Bed and trunk, Combined. J. D. Waters Bed bottom. E. Ambrozv Bed, Sofa. S. Karpen et al. Beds, Wead-rest for J. G. Ryan Belt. Power-conveying. E. C. C. Laird Bievele gear. F. V. Whitman Binder, Loose-leaf. J. O. Adams Binder, Music. D. F. Magee Binder, Separable. H. G. Razall Bit-brace bows, Connection for E. A. Schade Boat attachment for drawing seines from the water. N. O. Davidson Boiler-cleaning device. L. Smith et al. Boiler furnace, Water-tube. A. Smallwood Boiler water-purifying system. Steam. W. P. Wiemann Bolt anchor. J. Kennedy Book, Coupon. E. H. Coates Boring and routing machine. H. Borgmann Boring and routing wachine..H. Borgmaun Bottle-closing device....F. A. Thelen
Bottle-closing device....R. Zastrow et al.
Bottle fillers, Jet attachment for.......

A. N. Ketterer
Bottle, Non-vefillable.....E. C. Wallace

Car, Freight. J. W. Swartz
Car roof. F. Horn
Car wheel. C. J. Holcomb
Car wheel, Flexible. M. Maginn
Carburetev. L. P. Halladay
Cart device, Hand. F. Ferguson
Casting chilled car wheels or other circular
objects, Mold for. T. D. West
Cement post. H. D. Henion
Centrifugal machines, Means for controlling
electrically-driven. C. A. Adams
Cbain clasp. L. M. Peddicord
Chain link. H. E. Hayward
Chalk-line holder. G. Hallock
Chronograph. T. T. Fitch
Chuck for boring and turning mills, Automatic. L. H. Vold
Churn. W. J. Hamblin
Churn. O. G. Miltz
Cigar lighter, Electric. V. E. Extrom et al.
Cigarette-tipping nuachine. B. S. Molyncux
Circuit interrupter. H. R. Stuart
Cleaning tool and connection. I. H. Spencer
Cleansing and disinfecting fluid.
Chuch. F. C. Sanford
Chitch. F. C. Sanford
Chitch. F. S. Ellett
Clutch regulator P. M. Orlopp
Cock, Testing or priming B. Morgan
Colls and the like, Filler for. G. H. Rupley
Coke ovens, Leveling-ram for. L. Wilputte
Collar-stuffing machine, Horse. J. C. Collett
Commutators, Oil guard for. R. Siegfried
Concrete-block-making machine.

G. W. Kramer Conditivition of the condition of the co Current motor

Current potential switeb, Alternating.

D. Larson

Curtain fixture.

C. L. Hopkins

Cutting-board attachment.

Dam, Portable.

E. A. Ernst

Dash brace.

R. L. Notman

Dental cleaning device.

G. B. Hakins

Derailing machine.

D. W. Martin

Desk shelf, Swinging.

J. F. Collins

Desk tray.

J. S. Rowe

Detonator.

J. Harle

Dipper tooth.

V. W. Mason, Jv.

Display apparatus, Electromagnetic.

W. A. Harvey

Display case.

A. W. Folson

Distilling oils from the petroleum, tar and
the like industries using a high vacuum,

Apparatus for.

L. Steinschneider

Door check.

L. E. Hauson

Door construction Metal.

E. Ohnstrand Apparatus for. L. Steinschneider
Door check L. E. Hanson
Door construction Metal E. Ohnstrand
Door frame, Metal E. Ohnstrand
Door pintle socket J. C. Regan
Door-veleasing device. H. C. Bundy
Door securer. G. W. Packard
Draft rigging, Friction (2 pats.)...
J. F. O'Connor
Drawer pull M. and G. B. Kurtzon
Drill. C. H. Oslund
Drill attachment M. J. Whiteman et al. Drilling-machine trip mecbanism..R. Milne Drying plant, Hot-air......G. H. Thorp

Engine muffler, Internal-combustion.

O. C. Kreis, Jr.
Engine-starting device. A. C. Mengos
Engine starting mechanism, Gas.

Exhibitor, Automatic sign. W. Akin
Explosive. V. L. Bedier
Fabric-dressing apparatus.

M. Ratignier et al,
Fastener. J. Jacomin
Faucet. H. G. Cordley
Faucet, Two-way. F. Steiner
Faucets, Combined buffer-nipple and filter
for water. M. H. Smith
Feed-water heater. E. T. Turner
Fence fabric, Wire. G. E. Mirfield
Ferroboron, Producing. C. A. Hansen
Filling cabinet. L. S. Weaver et al.
Filling case. W. K. Holman
Filling macbine (Reissuc).

F. C. H. Strasburger
Filtering material. K. Kiefer
Fire, Means for protecting concrete or
other structures from. E. V. Johnson
Fishing stool. C. F. Fraser
Flooring and sheathing clamp, Adjustable
L. C. Moen
Flying machine, Aeroplane.

W. A. Smnan et al.
Folding mechanism. O. Roesen
Food product, Forming a. J. K. George
Fork handle, Auxiliary. H. C. Langlois
Fruit juices, Concentrating. W. B. Jackson
Furngicide. J. Stockhausen
Furnace-forming die. R. L. Williams
Garbage cart. W. Neapean-Hutchison
Garment clasp. C. L. Robinson
Garment clasp. C. L. Robinson
Garment hanger. J. P. Bell et al.
Gas and separating its elements, Liquefying
E. F. Gallaudet
Gas burner. C. Hoff
Gas burner. Decentrating E. H. F. Nehr
Fungicide. R. L. Williams
Garbage cart. W. Neapean-Hutchison
Garment clasp. C. L. Robinson
Garment hanger. J. P. Bell et al.
Gas and separating its elements, Liquefying
E. F. Gallaudet
Gas burner. Incandescent. O. Mannesmann
Gas-generator grates, Apparatus for and
method of operating E. Hillger
Gas burner. B. Spitzer
Gases, Means for electric-arc reactions on
O. Weber et al.
Gate fastener. W. C. Neel
Gcaring, Frictional. M. Tarrisse
Glass tubes, Machine for shaping the ends
of. R. Koenig
Glove rack or holder. J. F. Madden et al.
Governor. C. E. Wright
Gradler, Road. J. I. T. Starr
Grading machine. T. R. McKnight Grain and seed separator and cleaner.

O. W. Hall
Gramophone stop. J. A. Johnson
Graphophones, Electric brake for.

J. F. Means
Grinding machine. A. A. Wood
Grindstone attachment. D. I. Sterling
Gun lock, Multibarreled. W. L. Marble
Guns, Hammer for double-barreled.

W. L. Marble
Hacksaws, Stroke-adjusting mechanism for
power. E. S. Bradford, Jr., et al.
Hair drying, &c. Machine for.

H. V. Halliwell
Hammer, Pneumatic. A. H. Taylor
Handle. R. J. Prins
Handle fastening. W. A. Bradley
Handle or bail. A. R. Pritchard
Harrow riding attachment. R. R. Cyrus
Harvester, Cane. A. Domingues
Havester reel attachment.

Hasp. A. Voight
Hat pin. E. C. Geneux
Hay loader. B. A. Spinney
Hay loader. B. A. Spinney
Hay press. F. W. Ehman
Headlight, Antomobile. W. H. Hunt et al.
Headlight, Vehicle. J. M. Benninghoff
Hide-streebing device. E. Skelly Hide-stretching device......J. F. Lee Hoe blade.....E. Skelly

Hog-scalding troughJ. A. Douglas Hoisting apparatus, Safety device for al-
Hog-scalding tronghJ. A. Douglas Hoisting apparatus, Safety device for al- ternating-cnrrentW. N. Dickinson, Jr. HolderA. S. Langille Hood for capes and other garmeuts
Horn, Electric. J. Lanz
Horn, Electric. G. S. Andrus Horn, Electric. J. Lanz Horse detacher. H. C. Langlois Horse gag. C. Lau Horseshoe. A. Fuchs et al. Horseshoe antislipping attachment. S. A. Fritz Horseshoe-clip-forming machine
Horseshoe antislipping attachment
Hose connection. I. H. Spencer Hose counting S. B. Lockbart
Hose nozzle. A. Tregoning Hosiery frame, StraightT. Lieberknecht
Fee-cutting mechanismA. Day Induction coil, IneasedH. C. Thomson Inflatable-article fabricT. H. B. Gayner
Interlocking-hook fabricG. B. Smith Internal-combustion engine. E. W. Stevens Internal-combustion, or gine.
Internal-combustion motor .C. J. Coleman Froning board, Sleeve
R. Grosdidier Hose connection. I. H. Spencer Hose coupling. S. R. Lockhart Hose nozzle. A. Tregoning Hosiery frame, Straight. T. Lieberknecht Humidity, Regulating and maintaining. H. D. Tiemann Hydrocarbon motor. A. B. Fowler Ice-cutting mechanism. A. Day Induction coil, Incased. H. C. Thomson Inflatable-article fabric. T. H. B. Gayner Internal-combustion engine. E. W. Stevens Internal-combustion engine. C. Sintz Internal-combustion motor. C. J. Coleman Ironing board, Sieeve. H. M. Russ Irradiating apparatus, Holder J. Rosenthal Jointed figure. A. Schoenhut
Jointing-machine safety device
Jointed figure
Lamp, Automobile
Lamp-working apparatus. T. C. Luce Lantern-globe guard. A. R. Pritchard Lantern-globe-lifting device.
Lantern-globe-lifting device. W. T. and F. A. Iddings Lasting apparatus. W. B. Keighley Latch D. C. Good
Latch. D. C. Good Lathe. N. D. Chard Lathe, Engine. N. D. Chard Lavatory attachment. A. J. Podmore
Leather-working machine. A. H. Kehrbahn Life-preserving belt. F. J. Nekarda
Lightning arrester. E. J. Berg Lightning arrester. R. P. Jackson Lightning arrester. E. E. F. Creighton
Layatory attachmentA. J. Podinore Leather-working machine. A. H. Kehrhahn Life-preserving beltF. J. Nekarda Lightning arresterE. J. Berg Lightning arresterE. F. Creighton Lime-hydrating machineE. E. Lepine Linotype machineH. Degener LockC. C. Chapman Lock and latch, CombinedH. Davis LocketJ. C. Daniels
Lock and latch, CombinedH. Davis Locket J. C. Daniels
Locket. J. C. Daniels Locket. L. E. Sadler Locomotive, Electric. M. W. Storer Locomotive, Electric. M. G. Berentseu Locomotive, Electric. W. Schanke
Loom attachment & Kandrick
Loom beams, Supporting means for
Loom, Jacquard. J. Jagger Loom pattern mechanism, Carpet. C. Hugo Loom weft-parter S. S. Jackson Mail box E. D. Hale Mail chute E. A. Fordyce
Mail chute. E. A. Fordyce Mail-tying device. I. Allen
Mail-tying device. I. Allen Malting, Apparatus for turning germinating grain in. C. Schau Mauienring implement. A. A. Cowing Manure earrier. S. Jagger Mast step. II. Bolsterli Matrix-setting and line-casting machine.
Manure earrier. S. Jagger Mast step. II. Bolsterli Matrix-setting and line-casting machine
Measuring device
Matrix-setting and line-casting machine II. Degeuer Measuring device W. B. Spencer Measuring device, Fluid S. L. Nicholson Medical radiator for use in beds C. Ferrari et al. Mercury-vapor apparatus J. T. H. Dempster Metallie and glass construction V. Olsen et al.
Metallie and glass construction
Metallie leaf iu rolls, Machiue for packaging
Metallie and glass constructionV. Olsen et al. Metallie leaf iu rolls, Machiue for packaging
NOTE OF THE CONTRACT OF THE STREET
Milk separator. M. Goehler Milking-maehine meeliauism.
Milk can (2 pats.). C. E. North Milk separator. M. Goehler Milking-machine mechanism. R. A. Wiggins Milking machinery. A. Small. Jr. Mine cages and elevators, Safety mechanism for. T. G. Baird Mines, Safety appliance for. II. W. Scheiler Molder's flask. H. G. Voight Molding machine. M. E. Welch
isn for. T. G. Baird Mines, Safety appliance for
Molder's flask
Molding machineM. E. Welch Mop and serubbing-brush holder, Combined P. J. Glanecy Mop-head and wringer, Combined
Motor controlW. N. Dickinson, Jr.
Motor control, Alternating-current J. D. Iblder Motor suspension means, Electric C. A. Psilander Mower, Lawn E. F. Pond Mowing machine M. G. Otis Music-leaf turner W. A. Mathwig Music-spool adjusting and transposing device J. H. Ludwig
Mowing machine
Nut lock S Palmateer
Nut lock (2 pats.). M. Bartley Oil burner. II. N. Kellar Oil burner. C. W. Wright
Oil can
Oil burner, CrudeJ. A. Scott et al. Oil eanG. L. Neiburg Oil canM. T. and W. C. Axelton Oil pressJ. D. Belanger Oiler, AutomaticR. F. Adams Oiling fellies, Device forJ. W. Price Ore congrating apparatus Contributed
Ore-separating apparatus, Centrifugal
Ole Saparacol, Centifugat (5 pats.)

Ores, Roasting sulfidC.	W. R	enwick Thaver	5
Ozone-producing apparatus PackageJ.	L. F. Bo	Glaser wditch	5
Package carrier	.C. J. W <u>.</u> D.	Miller Smith	22.52.5
Ores, Roasting sulfidC. Outlet box	A. Jo	Brooke hnston	
Pad-stnffing mechanism	Collett	et al.	
Paint	и. Д. М. J. С. D.	Wangh Cnrry	2.54
Paper-associating machines, Fanism for	eeding .C. D.	mech- Curry	\$
Paper box. Folding G. W	iachin E. Jag - Gair	e genberg tetal	
Paper-hanging device, Wall Paper machines, Double-face	I. F.	Randle corru-	
gated	J. formii W	Dunfee 1g Rarrett	3
Paint Paper-associating machine Paper-associating machines, Paper-associating machines, Paper-bag filling and closing u Paper box, FoldingG. W Paper-hanging device, WallM Paper machines, Double-face gated Paper packages, Machine for Paper, Preparing fibrous mate manufacture of	rials J. D.	for the Burton	4
Parer, Potato). G. i chani:	Senlock sm_for	\$
Pasting device, Box	E.	F. Baii g	\$
Pebble or ball mill	R. D. E. P.	ollinger Dargiu Lovell	
Pasting device, Box. Patterns on metal fabries, Pro Pebble or ball mill. Penholder. Piano actions, Transposing me Pie plate. Pin-attached clip. Pipe where the surface of the large larger. Pipe langer. Pipe-laying mechanism. Pipe union.	eans f V. C.	or Vough	
Pie plate	V. Hu W. (ddleson Cluxton	
Pipe and conductor coupling.	. С. Ј. Н.	Baxter Kayser	3
Pipe hanger Pipe-laying mechanism	A. Ki B. H.	nowski Sands	,
Planter harrow attachmentC Planting machine (2 pats.)	Reis: C. E.	s et al. Patrie	g .
Pipe union	for.	Sobey	,
Potato digger. Power-transmitting mechanism Pressure regulator	F.	Spencer Dumas F. Mais	,
Pressure regulatorT Printing and registering appa	. W. ratus,	Brown Ticket	,
Printing-couple appliance	. Flet W	schman . Scott Trien	r
Printing machine, Web	ії. R. W. A.	Gutsch Ames	,
Propeller wheelJ. L. Protective deviceJ. L. Pulley Sheek-abyerling	[. S. [. R.]	Benson Hayden Willor	,
Pump coupling	É. Á. E.	Zevely Grover	7
Pump, MeasuringJ. Pump, MeasuringJ.	.Е. К Ј. Но	upferle tchkiss	,
Printing-couple appliance Printing machine	Sloai gnlat	n et al. ing the	,
twifucol D A	3 Full	conhour	
Punching machine A. L. Pyrites for bisulfite-of-lime &c., Utilizing Pyrotechnics	manuf .V. D	lacture, rewsen	1
Rail jointJ Rails. &c Means for forming on the ends of	. E. 1 paralle H.	ol faces Schultz	,
Railway brake beam (2 pats.). Railway-tail stayG. C.	.S. A. Hicks	. Crone et al.	,
Railway-switch-operating devic Railway-switch-operating devic	eT. J. A.	E. Lee Stoner	,
Railway tie and support there	for, I	letallic Cooper	,
Rails, &c., Means for forming on the ends of. Railway brake beam (2 pats.). Railway-rail stayG. C. Railway-switch-operating devic Railway tic Railway tic and support there Railway-track constructionJ. Railway-track railV. Range finder Range, Gas.	V. He	Blower essinger Beck	1
Range, Gas Razor Rear sight. V Refrigerating device.	. М. J	Green Barr	
Rear sight	V. L. M. E. atic e	Marble -Stover -control	,
ling mechanism for E. Car Refrigerator	penter .J. J	r et al. Baker	
Refrigerator	Q. H g=mec F=0	ammell hanism 'Connor	
ltefrigerating device. Refrigerating systems, Autom ling mechanism for E. Car Refrigerator. Refrigerator G. Refrigerator-car door-fastenin (2 pats.) J. Relasting machine. J. Rim, Demountable. J. Rivet. J.	. C. S A. R.	Schelter Behnke	
Rivet	emen), Link ts, &c., Ponkess	
Rivet. Roadways, Railway beds, pay Making. M. Roofing compound. Ropes, Means for joining the ing and other. W. Shuffle	.J. T	. Couse of driv-	
Rottery engine	C E	. ixeaus Clanu	
Rotary engine	E. h-spec	-Hager	
Rangdahaut Observation V	M.	Goenter Davisan	•
Rowboat. Saddle	A. ambil	Persons 1 et al.	
Sash-fastening device, Storm. Sash, Metallic windowW.	.J. F. F.]	Adams Bouness Hutlin	;
Sawdust box	P. P.	Boland	Ì
Scaffold, PortableA.	H. 1	MeGhan	l.
Seal. Seal, Car. Sealed can, Wax	E. J.	Brooks Brooks Johnsou	;
Seeding machine Separators, Blue-milk outlet i	.S. S	orensen trifugal	I
Seal. Seal. Car. Sealed can, Wax	. Ohri .D. F eehan	istenson lanagan ism for	1
blindstitch	J. On	derdonk White	
Shafts, Flexible joint for Ship cleaner, ElectrolyticG. Shock absorber	A. l W. p	E. Zock Frazier Knapr	
Shoe, Snow	J. C.	Haefer	

Skylight. Smelting process and apparate Snap contact. Snap switch. Soap, Mannfacture of resin. Solenoid-operated switch. Sowing Paris green, Machine T. Spark plug. Spectacles. Speed indicator and recorder. Speed mechanism, Differentia	B. Storch
Snap contact	R. W. MagnaJ. A. York
Solenoid-operated switch Sowing Paris green, Machine	.H. L. Smith
Spark plug. Spectacles.	W. Falwell J. H. Monroe
speed marcator and recorder. Speed mechanism, Differentia	I. A. Rhodes
Speed-transmission device, Va Spoke-tenoning machineI	riable J. B. Runner E. E. Fletcher
Sprayer, LiquidJ. E Spring construction Spring wheelC.	.L. A. Youug M. Backman
Sputum cnpC SquareT. V Stairways Runway for	. L. Kuudsen V. McCormick E. V. Carter
Stamp, Time	C. S. Ellis E. Carpenter
Speed-transmission device, Va Spoke-tenoning machine I Sprayer, Liquid J. E Spring construction. Spring wheel C. Sputum cnp C Square T. V Stairways, Runway for Stamp, Time Starting device C. Steem generator J. Va Steeving apparatus. Stock tank and heater, Autor	P. Lord
Stove lids, Mold pattern for .W. Stove, Portable. Strainer.	H. Taphoru
Strainer. Street-cleaning machine	G. Smith
Street-cleaning machine	L. Rolfe et al. S. Butterfield
Switch-operating deviceH. Switch-operating means, Elec	F. Scatchard
Switch-operating means, Elec Switch stand. Switches, Control of electrica	W. F. Traves
Switches, Emergency operati	ng means forF. E. Case
Switching device. Switching devices, Contact electric.	inember for .C. A. Tucker
Talking-machine diaphragm Talking-machine horn Tapping machine	W. W. Young .W. Hess, Jr. X. Marshall
Telegraph pole	.J. H. Norton .A. Goldstein P. B. Delany
Telephone switch apparatus. S Telephone system, Bridging.	. A. Koltonski
Switch stand. Switches, Control of electrica E Switches, Emergency operati reversing Switching device. Switching devices, Contact electric. Talking-machine diaphragm. Talking-machine horn. Tapping machine. Telegraph pole. Telegraph, Signal. Telegraphy. Telephone switch apparatus. S Telephone system, Bridging. Temperature alarm. Thread-forming apparatus.	.II. F. Joeckel A. Goldstein D. Dreier
Tile, Ornamental). II. Bellamy von der Linde A. B. Brewer
Thread-forming apparatus Tile, Ovnamental Tile, Ovnamental Tine scraps, DetinningC. Tire, Automobile Tire, Automobile Tire protector Tire threads, Machine for for	P. Farnsworth R. M. Halliday ming antomo-
bile	.W. H. CrookJ. Corwin Venus for se-
curing pneumatic and other Tobacco-flavoring compound. Tongs, Electrical-fuse	F. Owen
	lubbard et al.
Tool	W. Carpenter .T. Hardegen
Trolley retrieverR. F. TruckTruck TireTruck	Leveus et al. A. L. Hoover V. Backwalter
Tube-making machineS Typesetting and liue-casting	. M. Langston machine
Typewriting machine (2 pat	s.)
Typewriting machineA. T. Typewriting machineC	Brown et al. B. Coreoran F. Kurowski
Typewriting machine. A. T. Typewriting machine	arriage
Typewriting machines, Stop bars ofW. B. Typewriting machines, Word	for universal Kidder et al.
UndergarmentJ Underreamer Unwinding device	O. B. Smith . A. Struthers
Vacuum renovator	A. W. None
Valve Valve closnre for receptacles	.H. R. Adams
Valve	.T. A. Barrett engine, Fuel
Valve, Gate	A. J. Collar
Valve, Regulating	E. T. Winkler n large valve fixing small
Valve, Self-closingH. C Vehicle closure, Removable Vehicle lock Vehicle snspension, Pneuma	H. Kretz M. T. Baird
Vehicle wheel	H. Shankland L. L. Rogers E. S. Frev
Vehicle wheel	G. B. Lambert ils to another,
ingF. Co Vending machine, Coin-contr	ornelius et al.
Ventilating device	J. A. Glass H. Symonds .A. A. McRae
Ventilating device. Washing machine. Watch fob. Watch movements, Pallet-end Watch-protection cover. Water heaterW. J.	l-stone cap for W. B. Mehl J. M. White
Water heaterW. J.	Warner et al.

Issued January 24, 1911.

MECHANICAL PATENTS.
AccelerometerH. E. Wimperis Acetylene generatorF. B. Ray Acid and metal peroxid Making pitric or
Accelerometer
Advertising motiou, Live-motiou
Air-brake systems, Testing device for F. A. Gilfus Air compressor Air compressor F. M. Prather Air-forcing apparatus I. H. Speucer Airship C. L. Auway Airship-propelling meehanism M. Vaniman Amusement device Amusement device W. S. Tothill Antiskidding device Archer's bow G. C. Setchell Automatic cup B. Gabler Antomobile-body construction Automobile orgine-starting apparatus
Amusement device
Antiskidding device. W. S. Tothill Antiskidding device. W. P. Scholl
Automatic cup
Automobile engine-starting apparatus
ment forE. Zybach et al. AutosleighP. F. D. Belliveau AxleJ. A. Whitton Balaucing machine for rotable bodies
Balaucing machine for rotable bodies C. H. Norton Raling pressF. Newton
Balloon, DivigibleL. V. Feuillet Barrel-trussing and hoop-driving machine C. W. Sharnek
Balaucing machine for rotable bodies. C. H. Norton Raling press. F. Newton Baling press. G. F. Walters Balloon, Divigible. L. V. Feuillet Barrel-trussing and hoop-driving machine. C. W. Sharrock Bath attachment, Sitz. F. Netschert Battery. H. W. Darby Beaving. A. E. Clark Bearing with loose gnard ring, Roller. C. S. Lockwood Bod-bottom fabric. C. S. Lockwood Bod-bottom fabric. C. B. Fraley Bed, Spriug. E. Roberti Bedstead. F. G. Gale Belt fasteuer. F. M. Linderman Biuder, Loose-leaf. J. G. Griesinger Binder, Loose-leaf. G. E. Stansell Biscuit, Dog. C. Ellis Blind fast. W. H. Swift Blower, Boiler. E. B. Barnhill Boiler uozzles, Making steam Book staud aud musie rack, Adjustable. Z. H. Bloueh Book binding maching. J. Murray
Bod-bottom fabric. C. S. Lockwood Bed, Spriug. E. Roberti Bed, Spriug. F. G. Cale
Belt fasteuerF. M. Linderman Biuder, Loose-leafJ. G. Griesinger Binder, Loose-leafG. E. Stansell
Biscuit, DogC. Ellis Blind fastW. H. Swift Blower, BoilerE. B. Barnhill Boiler nozzles. Making steam
Boiler-tube cleanerJ. Wiechmann Book staud aud musie rack, Adjustable
Bookbinding machine. J. Murray Bottle-capping machine. H. Barry Bottle-capping machine. E. C. Miller
Bottle stopperJ. C. Schleicher Bottles, Combined breast and nipple for nursingW. M. Decker
Bottle, Non-refillable. O. L. Weigert et al. Bottle, Non-refillable. O. L. Weigert et al. Bottle, Non-refillable. W. G. and H. L. Lasher Bottle stopper. J. C. Schleicher Bottles, Combined breast and nipple for nursing. W. M. Decker Box-eover fastener. L. D. Fox Box-making machine. G. D. Parker Boxes, cases, &e. Lid for S. Maggiorani Braking system for hoists, Safety dynamic J. S. McKee et al. Broiler gridiron. C. W. Shields Brnsh-making machine. M. Young et al. Buekle, Self-lockiug. M. G. Knight et al. Buggy seat. F. Dusenbury Bulkhead. M. M. Upson Button-setting machine. G. E. Parker Buttons on shoes and other articles, Machine for fastening. G. W. Perkins Cable clamp, Wire. J. J. Piper Calculating machines, Key for keyboard. D. E. Felt Calendar. J. F. Bennet Calipers. J. H. Rogers et al. Cameras, Multiple-exposure attachment for
Broiler gridironC. W. Shields Brnsh-making machineM. Young et al. Buckle, Self-lockingM. G. Knight et al.
Bulkhead. M. M. Upson Button-setting machine. G. E. Parker Buttons on shoes and other articles, Ma-
chine for fastening. G. W. Perkins Cable clamp, Wire. J. J. Piper Cableway. T. S. Miller Calculating machines, Key for keyboard
Calendar J. F. Bennet Calipers J. H. Rogers et al. Cameras, Multiple-exposure attachment for
Cameras, Screen and plate holder for engrayers'. II. M. Norton
Cane knifeE. M. Hibbler Canopy switchR. B. Benjamin
for
car couplings, Automatic uncoupling device for
Car-unloading machine, CoalJ. Steiner Carboy-cleauing deviceA. J. Berg CarbureterB. N. Plerce

Or house	
CarbureterA. Huggins et al. CarbureterD. H. Haywood Card easeE. N. Anderson Carline, MetallicE. C. Covert Cartridge register, Automatic W. H. Maple et al.	
Card easeE. N. Anderson	
Cartridge register. Automatic	
Casing shoe	
Casing shoe. A. G. Heggem Caster, Ball. A. N. Bailey Casting. R. B. Browne Castings, Producing sound metal. L. Weiss Cellnlose films, Goffered article made from	
Castings, Producing sound metal. L. Weiss	
Cellulose films, Goffered article made from	
Cellulose films, Goffered article made from J. E. Brandenberger Cellulose from fibrons materials, Producing G. H. Marshall Child earrier. M. E. Macfarlane Chuck block. H. Roos Chuck jaws. O. R. Altwein Chute, Feed. T. W. Jenkins Cigar holder, Lighted. C. W. Humphreys Clamping device. A. B. Wood Clasp or holder. A. J. Pollock Cleaniug tool. I. H. Spencer Closet seat, Child's. N. P. Wallace Clutch. N. E. Heston Coated object and making the same. L. H. Backeland	
Child carrier M. F. Macfarlane	
Chuck block	
Chuek jawsO. R. Altwein	
Cigar holder, LightedC. W. Humphreys	
Clamping device	
Cleaning toolI. II. Spencer	
Closet seat, Child'sN. P. Wallace	
Coated object and making the same	
Coke, &c., Apparatus for determining water inJ. A. P. Crisfield Coke-oven-spraying mechanismT. J. Mitchell et al. Coke quenching, screening and loading apparatusA. Goodall Coller L. R. Tim	
in	
Coke-oven-spraying mechanism	
Coke greening screening and loading an-	
paratus	
Column and beam I. H. Campbell	
Collar	
Concrete bodies, Making metallic cores for	
Concrete roadwayE. M. Chadbonrae Concrete roadwayE. M. Chadbonrae Condepage (2 pars.)	
Concrete roadwayE. M. Chadbourne	
Condiment holderT. F. Laev	
Conduit, FlexibleA. E. Cherunek	
Copying machine, Multiple	
Good from will substance or string Mach	
Concrete roadway E. M. Chadbourne Condenser (2 pats.) E. Wiki Condiment holder T. F. Laey Conduit, Flexible A. E. Cheruaek Coop. Brooder P. H. Brainard Copying machine, Multiple	
chanism for the mannfacture of W Webster Core barrel, Donble-tube	
Core vents, Means for makingC. Hauson	
Corrugated barA. L. Johnson	
Cott, Adjustable invalidR. R. Miller Cotton gin Double-breasted-huller	
J. L. Hart	
Cottou piekers, Stripper for	
Cotton-stalk entter	
Crote Folding	
Crueible cover	
Current protector, High-tension	
Chrrent rectifier, Electrolytic alternating.	
Contain hanger Window C. Hickley	
Cutout, Electrically-operated automatie	
Chrrent rectifier, Electrolytic alternating A. S. Hiekley Curtain hanger, WindowC. A. Knight Cutout, Electrically-operated automatie P. A. Brown Cylinder linerJ. W. Moore Damper-controlling apparatus, ThermostaticB. C. Wiches Disappearing elairC. E. Edmund Dish-washing machineC. II. J. Dilg Disk erankF. E. Sntherland et al. Door braeket. Burglar-proof side	
Damper-controlling apparatus. Thermos-	
taticB. C. Wiches	
Dish-washing machineC. E. Edmund	
Disk erankF. E. Sutherland et al.	
Door bracket, Burglar-proof side	
Door-fastening device, Emergency-exit	
Door-fastening device, Emergency-exit Door, Grain	
Door hangerI. W. Davis	
Doors windows &c Eastening device for	
R. Randon	
Drill pressJ. C. Mullinnix	
Dyestuff, Diazo (3 pats.)A. L. Laska	
Electric formace C. F. T. Forssell	
Electric machine for maintaining a constant	1
electromotive force under variations of]
Electrical-conductor terminal or lug	j
Electric machine for maintaining a constant electromotive force under variations of speed, Dynamo M. W. W. Mackie Electrical-conductor terminal or lug C. R. Baird Electrical-current arrester, Excessive M. E. Vanghn Electrical effinvia, Apparatus for producing and utilizing L. Gerard Electrical resistance J. F. McElvoy Electrode for flaming-are lamps M. W. Allen et al. Electrode, Porous-cup P. J. Kamperdyk Electrolytic cell A. S. Hickley Elevator-controlling means A. Amory Elevator safety appliance H. W. Sayles Elevator safety device, Automatic H. P. May	
	i
and utilizing L. Gorard]
Electrical resistanceJ. F. McElvoy	1
Electrode for flaming-are lamps	3
Electrode, Porous-cupP. J. Kamperdyk	1
Electrolytic cellA. S. Hickley	1
Elevator safety applianceH. W. Sayles	1
Elevator safety device, Automatic	j
Elevator safety floorA. Z. Wilson	J
Elevator safety floorA. Z. Wilson Elevators. Liquid-container and valve	3
cable for use in water and like	1
End gateA. E. Hodder	7
Engine sparker, ExplosiveE. Canedy	3
Engines and analogous purposes, Igniter	78
Euvelop	I
Explosion motor	7
Elevators, Liquid-container and valve mechanism therefor particularly applicable for use in water and like A. E. Hodder End gate	7
Fan, Rotary. I. P. Ryan Faucet. J. F. Hill Fancet, Filtering. F. Koss Featherbone blade, Machiue for manufacturing (2 pats.) W. Webster Feeding apparatns, Hog. C. G. Howard Ferry slip (2 pats.) R. T. Stone File, Matrix-ear G. E. Wallin Filing cabinet W. L. Dunham	I
reatherbone blade, Machine for manufac- turing (2 pats.). W Webster	
Feeding apparatns, HogC. G. Howard	
Ferry slip (2 pats.)	3
Filing cabinet	
Filing drawer	1
Fire box (2 pats.)H. W. Jacobs et al.	Ŋ
Fire door and shutterF. L. Saino et al.	
Fireproof window frameH. E. Vance	7
File, Matrix-ear. G. E. Wallin Filling cabinet. W. L. Dunham Filling drawer. C. E. Flanders Filling system (2 pats.) E. A. Dunn Fire box (2 pats.) H. W. Jacobs et al. Fire door and shutter. F. L. Saino et al. Firearms. Light attachment. C. A. Lewis Fireproof window frame. H. E. Vance Fishing reel. W. Shakespeare, Jr. Flagpole attachment. H. G. Snhr	
representation of the state of	- 7

	1	11	. F./		17	V 		. \
Flexible pipe Float Floor or wall eon	 ine	ctor	, Éle	W.	T. I I. T cal.	Don L	nelly ynch	
Floor strip, Rem Floor-surfacing n Flying machine. Flying machine. Foot glove brace Fulcrum, Forged Funnel Furnaces, Steam Fuse, Inclosed Gage and straigh	ova	ble.		w.	S. E	i. S Mit	ehell	
Funnel	ne	ozzle	for	st R.	. Q. eam l. de Moe	Ac far e G Her	laius 1 Frahl idorf	
Gage and straigh Game apparatus. Gang edger. Gas-burning light Gas-compressing Gas controller or Gas engine. Gas generator, A Gas machines, Mo Gas, Manufacture Gas to burners, controlling the Gear, Change-spe Gearing.	t c	edge, ' para	.G. itus,	nbin F. T A Mu	ied. . H W. S .L. . E. iltip	Selu Ha Ha He-e	liner ultze rlow avtel ffect	
Gas controller or Gas engine Gas generator, Ac	re ect	gnla gnla ylen	tore	H.	F. V E. W R. S .J. S	oor Fitie	hees Blake Ruey Rhea	
Gas, Manufacture Gas to burners, controlling the Gear, Change-spe	e o Au su ed	of utom pply	atie of.	. R. G. ap I	J. H. para R. B M.	Wal Wa tus . N I. (ther ring for orth dirin	
Gear-generating Gearing. Gearing, Reversil	ma ole	tra	e nswi	D. W. ssio	и. М. L. п	Vel We Ha	lows nger ynes odcs	
Glass article, Pri Globe support Ghue-spreading m Gold leaf, Compos Grader, Road	sm ael	iF.	L. R. N	О. А.	Wac G. A	lsw Ic <i>A</i>	orth ardle obell	
Gram Shocket					۰,1۰ ۲	2000	1216.0	
Grinding commuttors, Machine forinding machine Grinding mill Gum from its verubber-like Hammer drill Harrow Harvester, Corn Hat fastence Hat fastence Hat pin, Safety.	get	able	som	. C. W rce, A. . A. . H.	H. Sep La H. E.	No a ra iwr Ta Kii	ting ence ylor nney	
TToo the second water			T 3	r 3	37 3	T 2 4	. 1	
Heating apparatus Heating, ecoling Apparatus for. Heating systems, for fluid Heel-nailing mach Hides, skins and l ing	inine	Ther e ther	most	E. atie C. C	C. co . E. . R.	Houtr A To	dges oller dair owle reat-	
mg. Hook Hose or nozzle he Hub-attaching de Hub-attaching de Loe pick Impedanee deviee Incubator alarm. Ineubator and nu	old vic vic	er		 .D.	G. I	Her H L. R.	ring abig Ray Rice aker	
Impedance device Incubator alarm, Incubator and nu Internal-combustic	rse	ery,	Elec	. W trie . A. . R.	Bee W.	. K kst	celly crom	
Internal-combustic Jewelry, Manufac Jewelry safety ca Keyboard machine Knitting-machine	tur tel es,	ring. 1 Key ttack	z for imen	. M. t	J. I L. E D.	Bor L. I E.	niol add Felt	
Keyboard machine Knitting-maehine Lace retainer, Sh Lacing hook Laminated hoard. Lamp, Electrie Lamp globe or sh Lamp glower, Ele	ade	e, G	J. as J	J .E. O. L. J	J. C. I Car . Li sceu	Jor Jise np, tle,	dan eoek Jr. Jr.	
Lamp glower, Ele Lamp, Incandesce Lamp, Miner's Lamp, Portable el Lamp socket, Inc Lantern bracket. Lead corroding-pol	n t lee	gas. tric	O. Land	M. A.	. Tl . Ca . G.	now mp L L	dess abell aws 	
Lamp socket, Inc Lantern bracket. Lead corroding-por	and ta	nd l	ent R. nekl	.F. H. e, (E. Bla comb	Seir,	elcy Sr. ed cier	j
Leather-glazing n Level, Spirit Liquid-fuel burner Liquid-fuel-burner	ti	p	F. (.H.	.P. H.	Ek Al	vall kers]
Liquid-fuel burner Liquid-separating Liquids or solids separating Load-transporting Lock Loom Narrow-wa Loom take-up med	de fr de re.	vice. om vice	gase	I. I S, J. V .II.	I. W Devi V. (O. . P. Be	Vlie Ge Han Ac . T uz,	eler for able lam Yoth Jr.	
Loom take-up med Looms, Bobbin-st ishing	eha rip er.	nisu per	for S	A. I fill S. N P. W.	E. R ing- I. Pa Cari A. E.	hoa rep ique ing Wil Bo	ides len- ette ston son one	0, 0, 0, 0, 0,
Mail-marking mac Manure spreaderW. N. Match box Match-igniter and	hin	ie	W V. N s.	. D . W C. I	. Do	orei ly. chh	Jr. erg	0,0
Matches, toothpick for holding Measuring machin Meats, Wrapping Medicinal applicat	e. for	or the	he lil	ke, .G. M.	Rece W. E.	L. epta Co Bar	Re icle oble ton	0.0.01
Medicinal applicat Merry-go-round. Willing apparatns. Miter box Moistener and seal	or	and J	.G. swa . A.	Hoo th Ba D B. V	rtho Ville	lon ten nugl	al. new art hby	0.02
Moistener and seal Molding flask Motor controller flater controller	er	for A. (euve '. R.	lops S	. D . W.	itm B et	ger avs urk al.	0.0202020202020
Motor control. Inc	100	rive	C.	T.	.а. Пец	der Ter	sou	5.05

Flexible pipeW. T. Donnelly FloatJ. T. Lynch Floor or wall connector, Electrical	Mower and tedder, CombinedC. Milstead Musical instrument
Floor strip, RemovableW. S. Mitchell Floor-surfacing machineA. A. Bagalio	mechanism for
Flying machineR. A. Moore Flying machineE. D. Appley Foot glove braceII. Fischer	Nitrogen-fixing organisms in agriculture or horticulture, Use ofW. B. Bottom'ey Nitrogen, Preparation of lime
Fulrum, Forged-steelE. S. Smith FunnelJ. Q. Adams Furnaces, Steam nozzle for steam-fan	Note sheets, Expression-marking forP. K. Van Yorx
Fuse, InclosedG. de Grahl Gage and straight edge, Combined J. H. Miner	Numbering device. W. Flett Nut lock. H. M. Smith Nut lock. J. Schuler Nut lock. T. L. King
Game apparatus	Nut lockR. M. Blakey Nut, Self-lockingM. Jacobs Oil and gas burnerR. L. Frink
Gas-compressing apparatus, Multiple-effect	Oil, Apparatus for feedingW. Kelly Oil hurnerH. L. Albee Oil gunJ. Dickens
Gas engineH. R. Stickney Gas generator, AcctyleneJ. S. Rhea Gas machines, Mechanical motor for	Oil switch
	Ore desulfurizing apparatus, Refractory C. A. Case Ores, Reducing and desulfurizing refractory C. A. Case
Gear, Change-speedJ. M. I. Girin Gear-generating machineE. R. Fellows	Orgau, Electrically-operated
Gearing. D. M. Wenger Gearing. W. L. Haynes Gearing, Reversible transmission	Outlet box
Glass article, Prism. F. L. O. Wadsworth Globe support	Paint and varnish remover. J. S. Patty Painter's jack. E. Shepherd
R. N. B. Campbell Gold leaf, Composition for making. L. Kurz Grader, Road. D. P. Henninger Grain shocker. M. Steuslet	PantographL. Klenk Paper-box-making machineF. A. Purchas et al. Paper-feeding machineF. L. Cross
Grinding commutators of dynamos and motors, Machine forW. H. Jordan Grinding machines Wheel-feed for	Pen filler, Fountain II. B. McKee Pen, Fountain L. I. Perry Pencil holder R. E. Kendall
C. H. Norton Grinding mill	Photographic-printing apparatusA. II. Fretter et al. Pianos. Tuning-pin lock for
rubber-like. W. A. Lawrence Hammer drill. A. H. Taylor Harrow. H. E. Kinney	Pillow holder and body prop, Combined
Harvester, Corn J. Fetters Hat-cleaning-pad holder H. J. P. Rottger, Jr. Hat fastence L. Forester	Pillow, SanitaryV. Reblum Piping safety deviceJ. Koenig Planer, CrankHL Lutter et al. Planter, CovnJ. Vinton
Hat pin, SafetyH. Jones Heating apparatusJ. M. W. Kitchen Heating, cooling and ventilating hulldings.	Plow. J. L. Jackson Plow, Motor. W. A. Dawson Plow, River disk. C. E. Eacrett
Apparatus forE. C. Hodges Heating systems, Thermostatic controller for fluidC. E. Adair	Plow, Steam gangW. N. Springer Plumb-bob pocketW. D. Cater Pocket-book holderA. W. Campbell
Heel-nailing machineC. R. Towle Hides, skins and leather, Machine for treatingG. B. Norgrave HookG. Herring	Pole erector and setterR. W. Scott Pole stand, ElectricD. A. Martin Pool and billiard table, Combination
Hose or nozzle holder. G. Habig Hub-attaching device. L. Ray Hub-attaching device. G. H. Rice	PostR. D. Redwine Poultry houseP. Kubein Pressure testing device. High and low
Ice pick	Printing apparatus. D. McKenzie et al. Printing machine. L. M. Todd Printing machine. M. H. Mann
Ineubator and nursery, ElectricA. Beekstrom Internal-combustion engineR. W. Coffee Jewelry, ManufacturingM. J. Bonniol	Projectile A. Wratzke Projectile G. E. Wells Propulsion, Jet P. Skouses Prospecting device W. and F. Centala
Jewelry, Mindracturing J. Bohnfol Jewelry safety catch L. E. Ladd Keyboard machines, Key for D. E. Felt Knitting-machine attachment	Pulverizer, Centrifugal-impaet
Lace retainer, Shoe J. J. Brinsley Lacing hook J. J. Jordan	Pnup, Air
Laminated hoardE. C. Hiseock Lamp, ElectricJ. O. Camp, Jr. Lamp globe or shade, Gas. T. J. Litle, Jr.	RadiatorJ. A. Wilson, Jr. Rail-anticreeping deviceJ. G. Wolfe Rail chairJ. N. Bonuell
Lamp glower, Electrical-incandescent O. M. Thowless Lamp, Incandescent gasC. A. Campbell Lamp Miner's	Rail straightener J. Contos Railway frog J. Hoskyn et al. Railway-spike protector W. L. Gregory Railway tie C. O. Pearee
Lamp, Miner's	Railway tie and fastenerW. F. Walker Railway tracks, Resilient support for H. H. Tunis
Lantern bracketR. H. Blair, Sr. Lead corroding-pot and hnekle, Combined A. J. Meier	Ratchet mechanismG. O. Leopold Razor-hlade-stropping apparatusF. H. Hoffmann
Leather-glazing machine. W. B. Turner Level, Spirit. P. Ekvall Liquid-fuel burner H. Akers Liquid-fuel-burner tip.	Refractory materialII. A. D. Collins RefrigeratorJ. Thalheim Refrigerator carA. G. Brown Resistance, Reinforced grid
Liquid-separating deviceII. II. Wheeler Liquids or solids from gases, Device for	Ribbon holder, BabyW. J. Hedcustrom River-bank protector, T. W. Mayey et al.
separatingJ. W. Gamble Load-transporting deviceII. O. Adam LockP. Toth	Rope, Jumping. T. L. Webster Rope tightener. F. and S. Gellert Rotary engine. W. W. Wheeler
Loom, Narrow-wareE. Beuz, Jr. Loom take-up mechanismA. E. Rhoades Looms, Bobbin-stripper for filling-replen- ishingS. N. Paquette	Rubber plate for shoesJ. P. Kline Safe, MoneyJ. Nutry Safety lockA. J. Perrin
Lubricant containerII. P. Carrington	Sandpapering rollerA. A. Raggalio Sash balance and antirattler, CombinedC. R., A., and O. J. Scharlandt Sash-balancing constructionW. Elmer, Jr.
Mail-bag catcher C. E. Boone Mail-marking machine W. D. Doremus Manure spreader W. N. Whitely. Jr. Match box S. C. Hirschberg	Sash fasteningJ. G. Wainwright Sashes of greenhouses, &c., Lifter for D. Hiffe
L. Re	Saw-jointing toolD. G. Andrews Sawing machine, WoodE. O. Swafford Sawmill carriages, Track scraper for
Matches, toothpicks or the like, Receptacle for holdingG. W. Coble Measuring machine, RopeM. E. Barton Meats, Wrapping for cased.	Seaffold-swinging device G. Firus Scraper and grader W. H. Violett Scraper and grader. Pood
Medicinal applicator and swab.	Scraper and grader, Road
Merry-go-roundD. Stewart Milling apparatnsL. B. Willoughby Miter boxW. A. Burger	Scal. Package and letterR. Archer Sediment removerA. Martinelli
Moistener and sealer for euvelops	Sewing-machine attachmentF. Marak Sewing machine. OverseamingA. Grieb Sewing-machine thread-lockW. R. Blair
Motor control. InductiveA. Sundh Motor controllerC. T. Henderson Motor-controlling deviceA. J. Horton	Shade voller
Mouse trap	Sheet cutterO. Gerde et al. G. Potstada

Sheet-fe Shield	1.77	1 .		
Shifting	eding mac	hme	F. 1	. Cross Tertford H VB
Shocking Shoe fa- Shoe po	mechanisi g machine, stener disher		W. P. C. Ros	Spoone: eneranz Metzzei
Shoe str Shoe, S Shoe, V	g machine, stener, oltsher, etcher, wimming, vaterproof, ker's tool, holder, wi mechanism lectric. djuster, pole-openins pouch, (witch, Rotand the like spenser, Lamp, Shoe, ssing mach effector, lug. dicating sy and doubt motor. Separable anceling an g and seve		C. B. C. V .s. H.	Koster agtborn Yerke
Shocmal Shutter Shutter	ter's tool holder holder. Wi	indow	W. 112	Hann: M. Har Devlii
Shuttle Sign, E Skate	mechanism lectric	1B. II.	Theiser	n et al . Dich Brown
Slack ac Sliding-p Smoker's	djuster pole-openin s pouch, (T. J. g gnard Jigarette	Madd⊕ .E. C.	Delenc
Snap sy Snow at	ritch, Rota id the like	ry inclting a	aramor G. B. pparati	e et al. Thomas 18
Soap di Sole cla	spenser, L mp, Shoe	0. iquid	A. I. T. J. D. C	tingbom '. Imm . Smith
Spark d Spark p	ssing macr eflector lug		J. Gou F. Ve E.	rmillion Canedy
Spinning	and doub	oling frame	guard J.	uchison L Gregory
Square, Stamp-ca	Separable, anceling a	nd postina	Rose	nberger nachine
Stampin Starch.	g and seve	ring mach	ine, Bl .G. Cl	ank aurleton Jersteir
Steam 1 Steam 1 Steam	ooiler ooiler engine wi	th piston-	D. C R.	laldwell Mackay led ex-
haust Sterilize Stitchins	ports r, Combina machines	tion Pull-off	J. S. T. nechan	Stump! Pulliam ism for
Stove, I	Folding car Sad-iron at	mp tachment	Theise .A. Refor gas	n et al. oneaglia s
Strainer	and cover	J. Ms , Combine	rkowsl d .G. J.	ki et al. Bernar
Street s Surfacin Sweep-va	weeper g machine ake approa	chV. C.	. C C. G Palme	Brooks Alloway r et al.
Sweeper Switch-t	hrowing n	nechanism . N.	L. С. Ма	Conahy
Talking	nse lock, E machines,	Automati D. C. and	e stop	for Nelson
Telegrap Telegrap	oh, Printing duic dot tr	g (3 pats.). ansmitter.	C. K	Jones Smith
Telephor Telephor	ne mouthpi ne system,	eee Lock-out	L. Stei party-li	nberger ne wenson
Telephor Tether Time al:	nie instrnm urm for ho	entS. L. tels, &c., l	Van A .J. W. Electric	kin, Jr. Brown
		C	3.1	Hinman
Tire Tire ant	iskidding a	rmor		`. Reed M. Panl
Tire Tire ant Tire arn Tire slee Tires to	iskidding a nor eve wheel rim	rmors, Device		'. Reed M. Panl . Willis E. Berg Puring
Tire Tire ant Tire arm Tire slee Tives to Tobaceo Tongs,	iskidding a nor eve wheel rim pipe Cuspidor	rmors, Device	W. Z H. C A. I for sec A. I Meloux	M. Reed M. Panl Millis E. Berg Furing Cade n et al. Easight
Tire Tire ant Tire arn Tire slee Tives to Tobaceo Tongs, G Toy Toy flyit Track lir	g and seve	s, Device J. F.	W. 2H. CA. I for secA. I Melous J. R. C. A. C. D.	N. Reed M. Panl Willis E. Berg Turing Cade n et al. Eastou Knight Wilson Varthen
Tire Tire ant Tire arm Tire slee Tires to Tobaceo Tongs, (Toy	iskidding a nor. eve. wheel rim pipe. Cuspidor ng machin fter and lin ther and lin ther and lin	s, Device J. F. e. ner. nechanism.		M. Reed M. Panl. Willis E. Bergeuring Caden et al. Eastou Knight Wilson Varthen et L. Ish rpenter
Tire Tire ant Tire arm Tire slee Tires to Tobaceo Tongs, C Toy flyin Track lit Train-co Transmis Transpla Trap Tube-win Tnbing-c	iskidding a or. eve. wheel rim pipe Cuspidor ag machine tter and lin ttrolling mechanism ssion mechanism overing device	s, DeviceJ. F. e. ner. nechanism. auism. J.		ReedM. Paul M. Paul M. Willis E. Bergeuring Caden n et al. Eastou Knight Wilson Varthen natic L. Lang L. Ish rpenter Parker
Tire Tire and Tire and Tire slee Tives to Tobaceo Tongs, Control Transmis Transpla Trap Tube-wir Thbing-co Turn-tab drivers	iskidding a nor. eve. wheel rim pipe. Cuspidor. ing maching ther and lin ntrolling m ssion mechanter. iding device overing maching and the line.	s, Device J. F. e. ner nechanism. auism. J. e. nchine, Fle nchine, For		Reed M. Paul M. Willis E. Berg uring L. Cade n et al. Eastou Knight Wilson Varthen atic Lang L. Ish rpenter Parker Jenkins er nack y pille Ferris
Tire Tire ant Tire ant Tire stee Tives to Tobaceo Tongs, C Toy flyit Track lir Transmia Transmia Transmia Transmia Trap Tube-wit Thing-c Turn-tab drivers Twynpau Typewrit	iskidding a nor. eve. wheel rim pipe. Cuspidor. ing maching fiter and lin ntrolling m ssion mechanter. inding device overing mand the line sheet. er, Adding	s, Device J. F. e. ner. nechanism. J. ee ncluine, Fle Anism for like. J.		M. Reed M. Panl M. Willis E. Berg Euring Cade n et al. Eastou Knight Wilson Varthen natic Lang L. Ish repenter Parker Jenkins hernack y pile- Ferris A. Case ohnson
Tire Tire ant Tire and Tire slee to Tobaceo Tongs, (Toy flying Transmis Transmis Transpla Trap	iskidding a nor eve wheel rim pipe Cuspidor ng machine fter and lin ntrolling m ssion mechanister ding device overing machine and the line sheet er, Adding er and ecoloring machine ing machine	s, Device J. F. e. ner. nechanism. J. e. ncline, Fle nism for like. J. compnter, (. Reed M. Paul . Willis E. Berg euring Cade n et al. Eastou Knight Wilson Varthen natic . Lang L. Ish rpenter Parker Jenkins . Case ohnson nassaury ed (arshall
Tire ant Tire ant Tire ant Tire slee Tires to Tobaceo Tongs, C Toy flyit Track lit Train-co Transmis Transpla Trap Tube-wit Tnbing-c Turn-tab drivers Twyer Tympau Typewrit (2 pats Typewrit Typewrit Typewrit Typewrit Typewrit Typewrit Typewrit Typewrit	iskidding a nor eve wheel rim pipe Cuspidor ng machine fter and lin ntrolling m ssion mechanete. ding device overing machineter, Adding er and the line machineter and the ling machineter and ling mac	s, Device J. F. e. ner. nechanism. auism. J. e. ncline, Fle nism for like. J. mpnter, (Reed M. Paul M. Willis E. Bergeuring L. Cade n et al, Eastou Knight Wilson Wilson Nathen L. Lang L. Ish rpenter Parker Jenkins A. Case ohnson gsbury ed Larshall Shrayer orcoran K. Lux Barnard ummett
Train-co Transmis Transpla Trap. Tube-wir Tube-wir Tube-wir Tube-wir Turn-tab drivers Twyer. Tympau Typewrit Typewrit Typewrit Typewrit Typewrit Umbrella Underrea	ntrolling mession mechanier. Inding devie overing made mechanier, Addinger and education maching maching maching maching maching mer (2 participal mer (2 participal metholing mechanier)	ee. J. men. J. men. J. men. A. mism for like. J. mpnter, G. me. C. me. W. A. ts.)	Anton	atic Lang Lang Lang Parker Parker Parker Jenkins Pernack y pile Ferris A. Case ohnson gsbury ed Arshall Shrayer orcoran X. Lux barnard mmett Mack S. Holl
Train-co Transmis Transpla Trap. Tube-wir Tube-wir Tube-wir Tube-wir Turn-tab drivers Twyer. Tympau Typewrit Typewrit Typewrit Typewrit Typewrit Umbrella Underrea	ntrolling mession mechanier. Inding devie overing made mechanier, Addinger and education maching maching maching maching maching mer (2 participal mer (2 participal metholing mechanier)	ee. J. men. J. men. J. men. A. mism for like. J. mpnter, G. me. C. me. W. A. ts.)	Anton	atic Lang Lang Lang Lang rpenter Parker Jenkins ernack y pile- Ferris A. Case ohnson gsbury ed arshall Shrayer occoran X. Lux barnard mmett Mack Lang Lang Lang Lang Lang Lang Lang Lang
Train-co Transmis Transpla Trap. Tube-wir Tube-wir Tube-wir Tube-wir Turn-tab drivers Twyer. Tympau Typewrit Typewrit Typewrit Typewrit Typewrit Umbrella Underrea	ntrolling mession mechanier. Inding devie overing made mechanier, Addinger and education maching maching maching maching maching mer (2 participal mer (2 participal metholing mechanier)	ee. J. men. J. men. J. men. A. mism for like. J. mpnter, G. me. C. me. W. A. ts.)	Anton	atic Lang Lang Lang Lang rpenter Parker Jenkins ernack y pile- Ferris A. Case ohnson gsbury ed arshall Shrayer occoran X. Lux barnard mmett Mack Lang Lang Lang Lang Lang Lang Lang Lang
Train-co Transmis Transpla Trap. Tube-wir Tube-wir Tube-wir Tube-wir Turn-tab drivers Twyer. Tympau Typewrit Typewrit Typewrit Typewrit Typewrit Umbrella Underrea	ntrolling mession mechanier. Inding devie overing made mechanier, Addinger and education maching maching maching maching maching mer (2 participal mer (2 participal metholing mechanier)	ee. J. men. J. men. J. men. A. mism for like. J. mpnter, G. me. C. me. W. A. ts.)	Anton	atic Lang Lang Lang Lang rpenter Parker Jenkins ernack y pile- Ferris A. Case ohnson gsbury ed arshall Shrayer occoran X. Lux barnard mmett Mack Lang Lang Lang Lang Lang Lang Lang Lang
Train-co Transmis Transpla Trap. Tube-wir Tube-wir Tube-wir Tube-wir Turn-tab drivers Twyer. Tympau Typewrit Typewrit Typewrit Typewrit Typewrit Umbrella Underrea	ntrolling mession mechanier. Inding devie overing made mechanier, Addinger and education maching maching maching maching maching mer (2 participal mer (2 participal metholing mechanier)	ee. J. men. J. men. J. men. A. mism for like. J. mpnter, G. me. C. me. W. A. ts.)	Anton	atic Lang Lang Lang Lang rpenter Parker Jenkins ernack y pile- Ferris A. Case ohnson gsbury ed arshall Shrayer occoran X. Lux barnard mmett Mack Lang Lang Lang Lang Lang Lang Lang Lang
Train-co Transmis Transpla Trap. Tube-wir Tube-wir Tube-wir Tube-wir Turn-tab drivers Twyer. Tympau Typewrit Typewrit Typewrit Typewrit Typewrit Umbrella Underrea	ntrolling mession mechanier. Inding devie overing made mechanier, Addinger and education maching maching maching maching maching mer (2 participal mer (2 participal metholing mechanier)	ee. J. men. J. men. J. men. A. mism for like. J. mpnter, G. me. C. me. W. A. ts.)	Anton	atic Lang Lang Lang Lang rpenter Parker Jenkins ernack y pile- Ferris A. Case ohnson gsbury ed arshall Shrayer occoran X. Lux barnard mmett Mack Lang Lang Lang Lang Lang Lang Lang Lang
Train-co Transmis Transpla Trap Tube-win Transpla Trap Tube-win Transpla Trap Tube-win Transpla Trap Tun-tab drivers Twypewrit Typewrit	ntrolling massion mechinete	anism	Anton N. N. M. B. Ca W. C. F. Xible C. P. formbin Y. E. D. J. G. Kin Y. E. B. B. Ca H. M. W. E. S. I. L. I. H. Y. H. Water-iv S. I. H. V. H. W. Y. V. H. W. J. J. H. W. W. W. W. W.	atic Lang L. Ish rpenter Parker Jenkins rernack y pile- Ferris K. Case ohnson gsbury ed larshall shrayer orcoran K. Lux Barnard ummett Mercer liversen Walker liversen Walker Loomis Judson L. Shimpf immins Vaddell Vagner Loomis Judson L. Bone cElroy Dean celeroy le celer
Train-co Transmis Transpla Trap Tube-win Trabe-win Trabe-win Trabe-win Trabe-win Tube-win Tube-win Tube-win Tube-win Tube-win Typewrit Umbrella Universal Valve, Ai Valve, Ai Valve, Ai Valve, Ai Valve, P Valves, S Vapor er Vehicle Vehicle s Vending Venting m Voting m tions	ntrolling massion mechanter	anism	Anton Anton B. Ca W. C. F. Xible. E. Cl railwa W. C. F. S. B. Ca H. M V. E. S B. Ca H. M V. J. Ti J. H. M W. V V. J. Ti J. J. Lau H. M J. J. Lau H. M J. Lau	atic Lang L. Ish rpenter Parker Jenkins rernack y pilo- Ferrise A. Case cohnson ngsbury ed larshall shrayer porcoran K. Lux sarnard tummett Mercer (versen Walker ulet of Shimpf mmins Judson Judson Bone Cellroy Celcousterer Upson Haley Haley
Train-co Transmis Transpla Trap Tube-win Trabe Tube-win Trabing-ce Turn-tabb drivers Twyer Tympau Typewrit Type	ntrolling massion mechanter	anism	Anton N. J. B. Ca W. C. F. xible. C. F. C. J. G. Kille. H. M. V. E. B. Ca T. H. K. B. C. J. K. B. C. K. J. K. K. J. K. K. J. K.	natic Lang L. Ish rpenter Parker Jenkins Ferris A. Case ohnson ngsbury ed larshall Shrayer orcoran K. Lux Sarnard ummett Mack K. Hall Mercer (versen Walker allet of Hewitt ffmann et al. Loomis Judson Bone celroy Deau y clec- usterer Upson Haley T Myers et al. s. con-
Train-co Transmis Transpla Trap Tube-win Transpla Trap Tube-win Transpla Trap Tube-win Transpla Trap Tun-tab drivers Twypewrit Typewrit Umbrella Underrea Universal Valve, A Valve, A Valve, A Valve, A Valve, P Valves, S Vapor er Vehicle Vehicle Vehicle s Vending Votting m Votting m Votting m Votting m Votting m Votting-m tions. Wall, Re Wall-seat Walls, Pc Washboile Washing ning, & Watches.	ntrolling mession mechanter	anism	Anton Anton B. Ca W. C. F. xible. E. Cl railwa W. C. F. combine. H. M. V. E. S. B. Ca H. M. H. E. H. C. H.	atic Lang L. Ish rpenter Parker Jenkins Lernack y pilo- Ferris L. Case cohnson ogsbury ed Larshall shrayer porcoran of. Lux Barnard tummett , Mack S. Hall Mercer (versen Walker let of Shimpf immins Ludson , Bone cellroy , Deau , clec- usterer Upson Haley Myers et al s, can- et al wheel

Waterproofing compound and making the
same. PalmitinE. Mas
same, Palmitin . E. Mas Weighing device D. C. McCan
Wheel M. J. and P. P. Adams
Wheel fastenerJ. E. Davis
Wheel with a special rim for the brake
A. Kastner
Wheels, Machine for making metal
E. Einfeld
WhiffletreeO. H. Smith
Whip holder, SafetyL. C. Davis
Wind shield Sectional W. G. Cox
Window constructionW. Elmer, Jr.
Window constructionW. Elmer, Jr Window screenW. A. Heaney et al
Wire clasp
Wire gate
Wire stretcher. O. M. L. and E. K. Smith
Wood, Apparatus for extracting products
fromF. Pode
Work-bench stopO. S. Good
Work holder
Work-supporting rack. Portable
J. F. Cavanagh
Wrapping-machine feeding mechanism
J. M. Patterson
WrenchJ. M. Gilman
WrenchC. L. Mansfield et al.
X-ray tube
Yoke attachment, Neck
Zwieback eutter
r rr

Issued January 31, 1911.

MECHANICAL PATENTS. Adding machine......C. Thompson et al. Adding machine. ...J. G. Vincent
Adding machine. ...J. Humphris
Aeroplane. ...S. S. Yarrington
Airship (2 pats.) ...C. E. Lamburth Aerial machine. S. S. Yarrington
Airship (2 pats.) ... C. E. Lamburth
Ambulanee. 1. H. Russell
Amusement device, Aerial ... R. Hartwig
Animal catching and holding device. ...
R. A. Morris
Animal trap. J. H. Tharp
Atomizer. J. S. Thurman
Automobile attachment ... C. R. West
Axle, Vehicle. N. L. Ballance
Axle, Vehicle-wheel ... K. Voller
Baling press. A. R. Stahl
Basin holder, Sanitary bed ...
Bed-spring support ... T. Hauser
Bed-spring support ... T. Hauser
Bed-spring support ... T. Hauser
Bedstead ... R. and F. Cane
Belt, Chain-driving ... J. E. Dukelow
Berry box, Folding ... W. W. Wood
Billiard cue ... C. Winning
Billing device ... G. C. Shepherd
Binder, Loose-leaf ... E. Thompson
Book and record binder, Bill ...
O. C. Manteufel
Book, File-index ... J. P. Jurgensen
Bottle-cap remover ... A. W. Stephens
Bottle-cap remover ... A. W. Stephens
Bottle, Non-refillable ... G. Kollenborn
Bottle stopper ... J. M. Creighton
Box-folding machine (Reissue) ...
E. W. Labomarde
Box or case for containing goods for transport ... A. J. Warne-Browne
Box shooks, Treating ... M. J. Miller
Briquet's for metallurgical or other purposes, Manufacture of ... W. F. Collins
Broom-corn holder ... J. R. Douglass
Broom-corn bees ... J. J. Fancher
Buckle, Hip-strap ... A. F. Hoska
Bulletin ... F. De Silva
Bung-making machine ... M. Moul
Burglar trap ... J. Y. Werrick et al.
Cabinet, Kitelien ... A. Abolt
Camera ... M. Niell
Camera fanging and heading machine ...
E. R. Billstone
Camera ... M. Niell
Camera shutter ... J. C. Dassler
Camera shutter ... J. C. Dassler

Coke ovens, Gas burner for.....R. Muller Dyestuff for chrome-mordanted wool, Monozo. ... II. Geldermann et al. Dynamo-brush holder. ... O. Hohme Dynamo mounting. ... J. F. MeElroy Earmark. ... II. C. Stoll Electric apparatus. ... C. A. Lohr Electric eouductor ... E. Morss Electric-conductor connector. .W. L. Bliss Electric cutoff. ... W. N. Sturgeon et al. Electric furnaces with polyphase currents. Supplying. ... P. Girod Electric-lighting system. .F. W. Reeves Electric cutoff. ... W. A. Sturgeon et al.
Electric furnaces with polyphase currents.
Supplying. ... P. Girod
Electric-lighting system. F. W. Reeves
Electric machine, Dynamo. ... B. A. Behrend
Electric machine, Dynamo. ... C. J. Fechheimer
Electric machine, Dynamo. ... D. Hall
Electric machine, Dynamo. ... D. Hall
Electric machine, Dynamo. ... A. Kingsbury
Electric regulation. ... J. L. Creveling
Electric-signal system. ... F. B. Wood
Electric switch. ... W. T. Pringle
Electric time switch, Automatic.
... B. F. Flegel
Electric wall box. ... M. Murray et al.
Electrode, Storage-battery.
... P. J. Kamperdyk
Elevator safety device. ... A. Nemeth
End gate and lifting jack. ... O. Bucklin
End-gate altachment. ... F. M. Carney
Engine driving mechanism, Beating.
... S. R. Wagg
Engine starter, Internal-combustion. ...
... C. I. Sackrider For explosion... D. E. Gardner Engines, Safety starting-crank for explosive ... P. Swenson Extension pipe... ... P. Swenson Extension pipe... ... J. M. Chappel Eyeglasses ... F. W. Nolte Fastening... ... J. M. Creger Faucet bung... ... D. Beehe Faucet strainer ... II. Mueller Filaments, films and other cellulose products from cellulose solutions, Manufacture of ... R. Homherg File leaf or holder for sales slips, &c... C. W. Zimmer et al. Filing machine ... E. C. Brull Fire detector, Automatic ... L. D. Wright Fishing reel. ... I. D. Wright Fishing spoon ... W. A. L. Miller Floor and celling plate ... A. J. Beaton Flue cleaner for stoves and ranges W. Jaques Flue-cutting device ... L. B. Burt Fluid-pressure governor ... M. J. Weber Force, Means for neutralizing ... A. B. Jones Forging of wheels of iron or steel, Mechanical ... J. Girlot Freight lowering and hoisting apparatus ... J. L. Sauters Garbage closet ... C. S. Rohinson Gas-burner controller ... A. Girtanner Gas engine, Variable-horsepower ... A. H. Porter Garbage closet ... C. S. Rohinson Gas denerator, Acetylene ... A. Henney Gas generator, Acetylene ... A. Henney Gas generator, Acetylene ... E. Ilayne Gas agenerator, Acetylene ... A. Henney Gas generator sto the action of liquids, Apparatus for subjecting ... W. Feld Gate ... T. A. Hill Gear, Geneva ... J. R. Reimund Gearing-coutrolling means, Transmission ... W. Fold Garing, Transmission ... C. W. Parker Gearing, Transmission ... C. W. Parker Glass and gasket cutter, Circular J. B. ShnttleworthP. Swenson Glass and gasket cutter, Circular.....J. B. Shnttleworth

Generating apparatus....S. A. Reeve et al. Governor and reversing gear, Automatte... Hammer, Magazine. R. G. Durst et al. Handenff. F. Busch Handle attachment. W. P. Patrick Harrow J. C. Eubank Harvester, Corn. J. C. Corderman Hat-body-elipping machine. E. W. Barnum Hat pins and the like, Protector for. A. Kemish Hem, Extensible. W. C. Rowland Hinge, Gravity. A. N. Anderson Hoeing machine, Rotary. G. Konig Hoist, Automatic. G. C. Grable Hook and eye. J. L. Poalk Horse-groomer's gearing. G. F. Press Hose bridge. J. J. Bardon Horse-groomer's gearing...G. F. Press
Hose bridge....J. J. Bardon
Hydrocarbon lighting system...

C. K. Harding
Ice machines, Water-purifier for...

J. J. Schrade
1ce-making system...A. E. Beals
Igniter with spark-emitting mass...

T. Kollermann J. Kellermann Illuminating interiors of buildings, Means for. J. J. Jennings
for. J. J. Jennings
lucandescent mantle, Inverted. C. K. Harding
Indicating device. C. S. Wisner
Insulated can. F. W. Niebling
Insulator protector. J. E. Field
Internal-combustion engine. D. Clerk
Internal-combustion steam motor. Lamp for antomobiles or other vehicles. Lamp for automobiles or other vehicles...

E. D. Dunning
Lamp, Inverted-incandescent-mantle...

R. E. Bruckner
Lamp-lighting apparatus. E. Barber
Lamp support, Dirigible. F. Jackson
Lantern. C. Orgaard
Last. H. F. Loewer Last. II. F. Loewer
Lead pigment and making the same.

A. S. Ramage
Leather, Making sole. J. A. Tanner
Lever mechanism, Controlling.

C. W. Parker
Life preserver for aviators. A. C. Ulmer
Linotype machines, Mold lock for.

A. W. Le Boeuf
Liquid-fuel burner. J. B. Hayden
Loading and unloading device.

R. L. Morgan
Lock and latch. A. Phillips
Loom. J. D. Peterson
Loom stop motion, Velvet. J. B. Derfinak
Looms, Glass-bar-bracket mechanism for.

F. Benz, Jr. F. Benz, Jr.
Lubrication apparatus. J. Triftshauser
Lubricator. N. L. Chalmers
Lubricator. S. S. Lyon
Magnetic materials, Apparatus for handling Lubricator. S. S. Lyon
Magnetic materials, Apparatus for handling
J. F. Schabel
Magneto-electric machine. W. W. Dean
Mail-bag catcher. G. E. Watkins
Mail-box-transmitting apparatus.
W. E. Stewart
Marine table. J. A. Bakarcih
Mattress, Adjustable. A. Bores
Mattress, Revetment. C. C. Condie
Mensuring device, Liquid. W. B. Jackson
Meat tenderer. M. Howard
Metallic hoop or band. S. and T. Svenson
Milk ean. E. H. Humphrey
Moistener and sealer for envelops, &c.
C. R. Stewart
Motor. J. W. Willson
Motor. J. W. Willson
Motor. W. S. Elliott
Motor-controlling apparatus, Electric.
G. H. Whittingham
Motor-controlling switch. S. H. Keefer
Motor-regulating device, Wind
Music player, Electrical. D. J. Hauss
Music sheets. Apparatus for cutting perforated. A. J. Swing
Musical instruments, Tempo-indicator for
mechanical. G. H. Bent
Nail driver. M. Dickson Musical instruments, Tempo-indicator for mechanical. G. H. Bent Nail driver. M. Dickson Nailer, Automatie. W. J. Ott Necktie. M. A. Griesemer Nose bag. J. K. Allshouse Nnt lock. B. J. Greer Nut lock. C. A. Evans Nut lock. C. A. Evans Ore concentrator. S. K. Behrend Paper-making machine.....W. T. Paper receptacles, Mechanism for making

T. Allatt
Pen, Fountain......F. M. Ashley
Pen, Fountain......M. S. Olsen

Pens in pockets, Device for holding foun-Reflector. P. Kleber
Refrigerating systems, Automatic coutrolling mechanism for L. Carpenter et al.
Refrigerator. J. H. Dagg
Refrigerator, Oyster-shipping C. E. Linkie
Roller press. E. U. G. Reagan Refrigerator. J. H. Dagg
Refrigerator, Oyster-shipping. C. E. Linkie
Roller press. E. U. G. Reagan
Rolling metal shapes, Apparatus for.

E. E. Slick
Roofs, Comh cover for corrugated.

W. E. Williams et al.
Rotary engine I. M. Kephart
Rotary motor W. S. Elliott
Roundabont E. B. Rayner
Ruffling and stitching machine.

A. H. De Voe
Rule, Slide G. W. Richardson
Sack holder J. W. Vance
Sash lock D. M. Barr
Sash weights, Apparatus for molding seamless. A. S. Hodges
Saturating and crushing machine.

B. Hosmann
Saw clamp E. C. Stearns
Saw handle E. B. Olson
Saw, Pneumatic C. J. Olson
Sawn handle E. B. Olson
Sawnill set-works C. W. Willett
Scale E. C. Pool
Scoop for baling narrow shafts.

G. Meyer
Scraper for road-engine wheels

G. A. Anderson
Scraper, Wheel J. Kindleberger et al.
Seal, Bottle J. A. Rennie
Seal for faucets C. C. Hucke
Seaming the heads upon cans, Apparatus
for L. C. Sharp
Sewing-machine ruffler P. R. Greist et al. Shaping machines, Work-holder for....

Shelving. J. F. Masters
Ship manipulating and turning apparatus... Ship manipulating and turning apparatus..

Shock absorber......E. C. Wilcox et al.
Shocking device, Hand....H. Ferris
Shoe-polishing machine...E. F. Hecker
Show case. Knockdown...L. N. Levinsohn
Sidewalk elevator, Extension. F. C. Birch
Signaling device. Electric...D. M. Bliss
Signaling mechanism....H. Macdonald
Skate brake, Roller...S. J. Neshitt, Sr. Stag, Apparatus for atomizing liquid....
G. Gantzen
Sleeping bag.....E. H. Fitch
Smoke consumer.....A. G. Krieg
Solder-hemmed caps, Machine for making..
E. M. Cobb Solder-hemmed caps, Machine for making..

E. M. Cohb
Soldering iron for soft soldering...

H. Schweitzer
Sound recording and reproducing machines,
Stylus or needle for...J. Jetter
Speed gage...O. Evensen
Speed indicator...A. Trowhridge
Speed mechanism, Variable (2 pats.)...

Speed-transmission mechanism...J. Barnes
Stackers, Hay-retaining device for hay...

J. O. McCreery
Stamp for marking parcels, letters, &c.,
Rotating hand...O. Kjeldaas

Stamp Hand A Laws et al
Stamp, Hand
Steam boiler
Steam boller
Steam boiler J. R. Vance Steps, Folding C. Halstead Stirrup, Saddle R. L. Graham Stove F. A. Nieberding Stove or heater, Liquid-fuel G. P. Wolff Stropper I. W. Irving Stump puller A. T. Fairey Suction apparatus F. Barby Swingletree E. G. Bormann Switch box or receptacle C. C. Maison Tannin-silver-albumen compound R. Weil Tanning device J. C. Roth et al.
Stove
Stove or heater, Liquid-fuelG. P. Wolff
StropperI. W. Irving
Suction apparatus
Swingletree E. G. Bormann
Switch box or receptacleC. C. Maison
Tannin-silver-albumen compound. R. Well Tapping device. J. C. Roth et al. Telegraph system. I. Kitsee Telephoue-desk attachment. C. W. Cochran Telephone system. F. C. Unger Tire, Antomobile. C. L. Vandervort et al. Tire casing. H. R. Holbrook Tire, Cushion. L. Knapp Tobacco pipe. M. Loeweustein Toy. A. T. Goldfield Toy. A. T. Goldfield Toy. A. Coaske Toy, Aerial. J. Knowles Trace holder, Safety. J. B. Levy Traetion wheel. S. M. Bower Tractor. J. B. Coffron Transporting bodies, Approach for moving E. L. Hocquart Trees, Vermin and bug shield for. Trube mill (2 pats.) P. T. Lindhard Turbine. W. S. Elliott et al. Turbine-governing mechauism F. Hodgkinson Typewriting machine ribbon-spool. E. J. Tanner et al.
Telegraph systemI. Kitsee
Telephone system F. C. Unger
Tire, AntomobileC. L. Vandervort et al.
Tire easing
Tobacco pipe
Toy A. T. Goldfield
Toy Aorial I Knowles
Trace holder, SafetyJ. B. Levy
Traction wheelS. M. Bower
Transporting bodies. Approach for moving
E. L. Hocquart
Trees, Vermin and bug shield for
Tube mill (2 pats.)P. T. Lindhard
Turbine
Turbine-governing mechanism Hodgkinson
Typewriting machineL. Ney
Typewriting-machine ribbon-spool
Typewriting machines, Coutrolling mechan-
ism for the carriages of J. B. Secor
Valve actuator for locomotives Emergency
slideF. P. Sasaman
Valve and oiler, Combined throttle
Valve and valve-actuating means
Valve for hydrocarbon engines, Mixing
Typewriting machineL. Ney Typewriting-machine ribbon-spool F. J. Tanner et al. Typewriting machines, Coutrolling mechanism for the carriages ofJ. B. Secor ValveR. L. Hobbs Valve actuator for locomotives, Emergency slideF. P. Sasaman Valve and oiler, Combined throttle L. C. Bayles Valve and valve-actuating means C. J. Siddall Valve for hydrocarbon engines, Mixing Valve for internal-combustion engines C. J. Pilliod
Walnut (2. p. J. Pilliod
valve gear, Locomotive (3 pats.)
Valve griuderJ. Y. Porter, Jr.
Valve mechanism for internal-combustion
Valve-seating machineJ. F. Highee
Vehicle, MotorJ. D. Allen et al.
Vehicle wheel
Vending-machine ejector
Vending machine Post-card
J. E. Gossman et al.
Ventilating apparatusF. E. Swift
Vessel closures. Apparatus for applying
J. Couley
Vise and work holder, Universal
Vise, BenchT. A. Gannoe
Well construction W. H. Dean
Warning signal
Washing machineA. B. Smith
Watchmaker's toolF. W. Bechberger Water governorA Dickerson
Water-heating apparatusJ. F. Muller
Water trap, Steam-actnatedJ. E. Jones
Wave motorT. J. Beaudette
Weather guard and sash lock. E. S. Kelly
Wheel sand band, VehicleJ. N. Richards
Wheelbarrow
Whisk broomM. R. Hobart et al.
Windmill lubricatorH. H. Macomber
Window attractionF. M. Kennedy Wrench
WrenehG. W. Gruver
WrenchF. Hachmann et al.
Valve for hydrocarbon engines, Mixing P. D. Johnston Valve for iuterual-combustion engines C. J. Pilliod Valve gear, Locomotive (3 pats.) H. J. Pilliod Valve griuder
Immed February 2 1011
Issued February 7, 1911.
MEGILANICAL DAMENTO
MECHANICAL PATENTS. Acoustic diaphragm

Acoustic diaphragm
Adding-machine resetting device
J. A. Cheape
Advertising postF. W. Boyer
Advertising postF. W. Boyer AeroplancJ. W. L. Harrell et al.
Air brakes, Bleed-cock for, J. M. Dooley
AirshipR. G. Rettinger
AirshipF. Mylius
Alarm regulator
Alkali, Dehydration of caustic
Animal treating apparetus F. C. Coff
Animal-treating apparatusF. C. Goff Ankle brace
Antislipping device
Apparel, Inspection device for wearing
J. A. Suyder
Armature for magneto-electric machines
Auger, Post-holeJ. G. Mahon et al.
Awl, Embroidery M. W. Potter et al.
Axles, Making hollow carC. M. Wales
Back-geared motorA. M. Gray
Baeteria in liquids, Apparatus for killing
(Reissue)J. Wlllmann
Bale cover
Bale cover. W. H. Harriss Barrel-heading machine. J. B. Wagner
Barrel-heading machineJ. Shinsky et al.
Barrel, KnockdownC. H. Mix
Battery and holderG. L. Patterson
Bearing, RollerF. Whitney
Bearing, Roller
Bedstead canopyF. F. Schwaller Bell, Adjustable barS. Johnson
Bell ringer for door knobsW. Kriz
Dell linger for door proparetter. M. Mila

Belt fasteuer, Belt-lacing mace Belt, Trousers. Blacking device Blank-feeding in Blank-shaping in Blower, Air-con Boat bailer, Aus Bolt anchor. Bolt anchor. Bolt anchor. Boot or shoe we Bottle-cap-apply Box rack. Brake beam fulce Brake mechanis Brake mechanis Brake mechanis Brake mechanis Brake mechanis Browder. Buckle, Buckle. Butter, Flavorin Button-blank-cnt Button fastener Cabinet, Accoun Can eud re-form Canopy. Car. Car coupling rel Car, Dump. Car registering Car-cooper. Card holder. Cash register. Castings, Appar Cement kiln. Cement, Manufaches cutter. Cigarette machi Continuous. Cigarette-makin Cigar	Metal	C. Heinel
Belt-lacing mach Belt, Trousers	hine	E. Toole G. D. Jones
Blacking device Blank-feeding n	, Shoc taehine	I. J. Weigle .C. W. Graham
Blank-shaping n Blouse	machine	L. II. Hays
Blower, Air-con Boat bailer, Aut	npressing tomaticÇ	P. J. Fanning H. Hitchcock
Bolt anchor		J. II. HaywoodJ. Kennedy
Boot or shoe		.F. L. Cheever
Bottle-cap-apply	vert (2 pats. ing mechani	sm
Box rack	H.	H. Hungerford
Brake-beam fulc	crum	nnlogate at al
Brake mechanis	m	G. S. Ackley W. A. Barker
Bridge, Transfer	r or float	J. B. French
Brooder		J. A. Connolly
Buckle	E	H. A. Johnson N. Humphrey
Buckle, Belt Buggy storm to	p	A. A. West .W. A. Hunter
Building block, Butter, Flavorin	Hollow	F. Buchartz G. W. Yeomau
Button-blank-ent	tting machiv	le
Button fastener Cabinet, Accoun		Spooner et al. R. D. Browniug
Can eud re-form Canopy	niug device	.E. F. Hartlove A. L. Hancock
Car coupling		W. P. Murphy .L. M. Stought
Car-coupling rep	pair attachm	ent .C. F. Sullivan
Car, Dump Car registering	device, Pass	P. J. Harrigan euger
Car-roof constru	iction	J. II. Hood .J. A. Costello
Car roofs, End Car, Sleeping	carline for.	W. J. Anson
Car uuderframe	• • • • • • • • • • • • •	W. T. Dawson
Card holder		J. A. Manson
Casting ingots	ontus for ma	E. Gathmaun
Cement kiln		W. H. Taggart
Cement, Manufa	acturiug R. Torn	va v-Schosberger
Chair fan attach Cheese cutter	iment, Rocki	ngP. Harbula
Cigarette machi Continuous	ne with tipp	ing attachment, '. E. Ludington
Cigarette-makin Clock, Alarm	g machiue	C. Coneonis H. H. Boyce
Clock, Program Clothes tree, Fo	oldiug	R. Wendt
Chair fan attael Cheese cutter Cigarette machi Continuous Cigarette-makin Clock, Alarm Clock, Program Clothes tree, Fo Clnster mounti Process of ma Clutch, Friction Clutch, Friction Cutch-operating Coal and slate Coal elevator Coal-handling at Coat stand Cock, Lock Code, Cipher Coin-controlled Collar support, Combustion eng Compressor Concentrator Concentrator Concentrator	ngs and bla aking	nnks for same, H. Levin
Clutch, Friction Clutch-operating	r wechauism	J. A. Friddle
Coal elevator	separator	M. C. Volk
Coat hanger	pparatus H. F	. Ungerer et al.
Cock, Lock		J. Schneible
Coin-controlled Collar support.	mechanism. Lady's	R. H. Baker
Combustion eng Compressor	ine	J. Sulzer H. W. N. Cole
Concentrator Concentrator, D Concrete building)ry	.N. H. Freeman .S. K. Behreud
Concrete buildin	ng and maki	ng the same .D. J. Andrew
Concrete column	ns, piers and 	the likc, Siuk- B. Christiansen
ing	Reinforced	P. Holmberg .S. F. Burbank
Concrete piles Concrete, Reinf Concrete struct Controller Convertible chai Conveyer for in	or columns,	S. F. Burbank
Concrete structi	ure	J. A. Ferguson
Convertible chai	ir ncandescent	A. Reisman
Conveyers. Fee	ding meaus	R. Wagner for belt
(2 pats.) Cooker, Fireless		W. Relnecke T. Pierson
Core and disk c	uttiug tool,	Circular .T. L. Crossley
Corer, parer and Cork extractor.	d slicer	J. M. Carter F. J. Sersen
Corn grader, Se	ed	C. Hunnicut
Corn slitter an Cotton-ginning	d scraper process and	apparatus
Cotton lap head	d	O. L. Owen
Cover, Receptace Crane, Bullder's	eleC. F	H. B. Morse
Cultivator attac	chment	R. M. Kelly M. Hendren
Culvert, Metal. Curreut system	of distribu	J. B. Yarmin tion, regulation
and control, Curtain and sh	Alternating ade support	J. Bijur F. Bacigalupi
Curtain fixture.		E. S. Doyle
Curtain-pole fas Cul-lever brack	stener et	.H. E. Robbins .W. J. Scherer
Cutter head	J. ngohino	S. Wakefield
Conveyers, Feed (2 pats.)	holder	E. L. Chott
Dental inlay fi	illings, &c.,	Making W. H. Taggart
Dental matrix Diamond cover	clip	Making
Display apparat Display can, S	tus heet-metal	.B. B. Bienhoff
	J. I	F. Xavier et al.

Display device, Wind-actuated
Display device, Wind-actuated
DofferH. D. Colman et al.
Door lock
Dough, &c., Machine for dividing. F. Zarth Drag. J. E. Wright Dredge W. T. Sain
Drill spindles, Feed mechanism for
Drinking machine
Dumping mechanismM. A. Young Dust-removing machine, Street, Street
Dust trap or collectorS. C. Cox Dye, MouoazoE. Berthold
Dyeing loose material, Apparatus for
O. Ernst et al. Ear ring
Egg testerT. R. Gole Electric circuit, Apparatus for regulating or controlling the pressure of the cnr-
rent in anJ. Watkinson et al. Electric-circuit-controlling uncaus
Dust trap or collector
Electric lurnace
Electric switchF. II. Hallefas Electric switchC, S. Van Nuis Electricity Popularing etails
Electrodes for use in alkaline accumulators,
Manufacturing ironA. T. K. Estelle Elevator-operating mechanism. E. Carlson Eugine attachment. Traction
E. V. McCulloch Engine-cylinder liningE. N. Sorensen
Engine starting-crank, Explosive
Engines, Economizing-throttle for internal
Engines, Vaporizer for internal-combustion D. Roberts et al.
Eraser, BlackboardJ. L. Enyeart Exhibitor, SignB. A. Harris Exit lock EmergencyH. II. Dupout
Fabric, Treating adhesive-coatedA. Thoma
Fall-rope carrier. H. Whiting Fan and pump wheel, Centrifugal (Reissue) G. M. Capell
Fan, Rotary
Feather renovatorE. Greiner
Exit lock, Emergency. H. II. Dupont Fabric, Treating adhesive-coated. A. Thoma Fall-rope carrier. H. Whiting Fan and pump wheel, Centrifugal (Reissue) Fan, Rotary. W. Meier Farm gate. M. Loomis Faucets, Sign-exhibit attachment for. Feather renovator. E. Greiner Feed and litter carrier H. L. and H. J. Ferris Feed-water controller. G. Fleming Feed-water heater. F. Hodgkinson Feed-water heater for locomotives. Feuder. J. A. Boughton Fiber from cocoanuts, &c., Apparatus for removing. R. Marot File handle. W. B. Wankel Filling machine. C. F. Colbert Filter, Slime. E. H. Lutz et al. Filter trough. F. B. Leopold Fire alarm, Automatic. E. F. Oliver Fire alarm, Automatic. E. F. Oliver Fire escape. C. W. Schumann Fire-extinguishing system. I. Corneliussen Fire ydrant. W. W. Corey Firearm lock mechanism. W. E. Post Fireproof partitiou sliding door for fire walls, Hollow. R. W. E. Buttlar Fishing float (2 pats.) G. A. Pilueger Flat iron, Self-heating. C. H. Ciliske Flour, Milling (2 pats.) A. E. Humphries Flue stopper. A. W. Andrews Flying machine. J. E. Kaupke Flying machine. J. E. Kaupke Flying machines, Support surface for. I. Etrich Fodder tie. L. Cobb Folding table. J. A. Brown Fork E. C. Hangland Fork E. C. Hangland
Feed-water heaterF. Hodgkinson Feed-water heater for locomotives R. C. Monroe
FeuderJ. A. Boughton Fiber from cocoanuts, &c., Apparatus for
removingR. Marot File handleW. B. Wankel Filling machineC. F. Colbert
Filter E M. Knight Filter, Slime E H. Lutz et al.
Fire alarm
Fire door for elevators. E. O. Vandemar Fire escape C. W. Schumann
Fire hydrant
Fireproof partition sliding door for fire walls, Hollow
Flat iron, Self-heatingC. H. Ciliske Flour, Milling (2 pats.)A. E. Humphries
Flying machineJ. E. Kaupke Flying machines, Support surface for
Fodder tie
Foundry shaper Draw-out
Frame
Fruit press, Box-nailingJ. O. Naslin Fruit-washing machineE. L. De Long
Furnace draft regulator, HeatingG. B. Stambaugh et al.
Furnace stove, BlastA. G. McKee Furnace stoves, Closure for blast A. G. McKee
Furnaces and ovens, Door for metallurgical C. N. Hooper Furniture M. Harris
Game device. T. C. Wood Gaming device. J. J. Rubens
M. and H. E. Morton Frame. F. Stead Fruit jar. F. Brelle Fruit press. Box-nalling. J. O. Naslin Fruit-washing machine. E. L. De Long Furnace. I. Hess Furnace draft regulator, Heating. G. B. Stambaugh et al. Furnace stove. Blast. A. G. McKee Furnace stoves, Closure for blast. A. G. McKee Furnaces and ovens, Door for metallurgical C. N. Hooper Furniture. M. Harris Game device. T. C. Wood Gaming device. J. J. Rubens Garbage closets, Ventilating conduit for. C. S. Robinson Garbage crematory. C. A. Raggio
Garbage crematory
Gearing, Power-transmission. W. C. Kirk Gem settingJ. W. Lawson
Gas appartus, AcetyleneC. B. Sherlock Gasolene engine, Two-cycleF. Howes Gearing, Change-speedD. M. Smith Gearing, Power-transmission. W. C. Kirk Gem settingJ. W. Lawson GloveT. E. Scully Goods receiver, DeliveryC. Keck Graining toolJ. B. Lamb Grass-dectroylng machine, Quack N. W. Nelson et al. GrateR. Hilprecht R. Hilprecht
Grass-dectroying machine, Quack
Grate
KnifeL. B. Whipple

Gun. W. D. Smith Gun, Breech-loading. G. S. Lewls Hammer Pen. C. J. Thion
Gun, Breech-loading. G. S. Lewis Hammer, Peen. C. J. Thin Harrow. H. Zum Walde Harrow. G. E. Walker Harvester, Beel. J. C. Gerken Hat fastener. A. J. Warner
Hat fastener. A. J. Warner Hay rake. C. II. Pelton Head gate, Flume. E. Ashley
Headlight-controlling means. J. A. Moder Headlight, Dirigible
Headlight, MovableJ. McElliott Headlight, VehicleF. J. Madden
Headlight-controlling means. J. A. Moder Headlight, Dirigible
Heel, Boot and shoe S. Burnham Heel-nailing machine E. E. Winkley Hinge C. D. Tahor
Hinge. G. W. Halley Hinge, Vertically-adjustable. W. F. Hunter Hinging machine. W. Edge
Hitching device, HorseJ. P., A., and C. Olson
Highing hadden W. Edge Hitching device, Horse
M. Schubert Horseshoes, Apparatus for the preparation of II. Vosberg Hose coupling J. E. W. Boesch Hot-air furnace J. Preuss Hydrant G. W. Hayden Hydrant J. Ewart Hydrocarbon bnrner J. J. Meyer I-bars with taperless flanges, Forming H. Sack Ice-cleaning means for ice wagons G. E. and J. H. Bardick Ice-cream cutting and wrapping machine . J. Bellini J. Bellini
Hose coupling. J. E. W. Boesch Hot-air furnace. J. Preuss Hydrant. G. W. Hayden
HydrantJ. Ewart Hydrocarbon bnrnerJ. J. Meyer I-bars with taperless flanges, Forming
Ice-cleaning means for ice wagous
Ice-cream cutting and wrapping machine J. Bellini Ice-making apparatus
Ice-making apparatusP. R. McCrary Ice tongs and weighing device, Combined
Igniter
Incubator. W. H. Howard Insect trap. R. N. Wood
Ice-cream cutting and wrapping machine. I. Bellini Ice-making apparatus
Internal-combustion engineW. J. Perkins Internal-combustion engineL. A. Vallillee
Internal-combustion engine. L. A. Vallillee Internal-combustion engine. T. Turubull, Jr. Iron from rust, Protecting. A. Laug
Ironing boardT. A. Tate JackO. H. Ames Journal supportJ. J. Buschor
Key-duplicating machine. E. C. Wakeland Kitchen utensil
Knitting machines, Cam for rib
W. Scott
Lamp burner, Petroleum-vaporO. Johansen
Lamp burner, Petroleum-vapor O. Johansen Lamp, Electric hand J. W. Mead Lamp, Fixture M. Harris Lamp, Incandescing T. White
Lamp burner, Petroleum-vapor. Lamp, Electric hand. J. W. Mead Lamp, Fixture. M. Harris Lamp, Incandescing. T. White Lantern. J. H. Hill Lantern attachment. A. R. Pritchard Lantern, Tubular. C. T. Whipple et al.
Lamp burner, Petroleum-vapor. Lamp, Electric hand. J. W. Mead Lamp, Fixture. M. Harris Lamp, Incandescing. T. White Lantern. J. H. Hill Lantern attachment. A. R. Pritchard Lantern, Tubular. C. T. Whipple et al. Latch. G. G. Frederick Latch. L. Romines Level. M. Ichtertz
Lamp burner, Petroleum-vapor. Lamp, Electric hand. J. W. Mead Lamp, Fixture. M. Harris Lamp, Incandescing. T. White Lantern. J. H. Hill Lantern attachment. A. R. Pritchard Lantern, Tubular. C. T. Whipple et al. Latch. G. G. Frederick Latch. L. Romines Level. M. Ichtertz Lifting-jack ratchet device. E. L. Gormley Light apparatus for sea lights, Intermittent
Iron from rust, Protecting A. Laug Ironing board T. A. Tate Jack O. H. Ames Journal support J. J. Buschor Key-duplicating machine. E. C. Wakeland Kitchen utensil S. D. Ramey Knitting-machine looping device E. R. Olmsted Knitting machines, Cam for rib R. W. Scott Lamp burner, Petroleum-vapor O. Johansen Lamp, Electric hand J. W. Mead Lamp, Fixture M. Harris Lamp, Incandescing T. White Lantern J. H. Hill Lantern attachment A. R. Pritchard Lantern, Tubular C. T. Whipple et al. Latch G. G. Frederick Latch G. G. Frederick Latch L. Romines Level M. Ichtertz Lifting-jack ratchet device F. L. Gormley Light apparatus for sea lights, Intermitteut G. Kocco C. McCallum Locking device for shiftable members
Locking device for shiftable members
Locking device for shiftable members R. Milne Locking device, Key
Locking device for shiftable members R. Milne Locking device, Key
Locking device for shiftable members R. Milne Locking device, Key
Locking device for shiftable members R. Milne Locking device, Key
Locking device for shiftable members R. Milne Locking device, Key
Locking device for shiftable members R. Milne Locking device, Key

	6 - 010 01150	or on 1.		na obina	
Pen fi Perfor	t shellin ller, Fou ating in	g or n intain . achine.	illing i	uachine W. N. Ca M. H.	Matzat rpenter Norton
Photos	;raph-pri	inting (levice C. F	Barr	et al.
Piano- Pianof	graph-pri	mechan	nism, A	utomatı G. P.	Brand Berdux
Pick Pipe-fl	ange wr	eneh	· · · · · · · · · · · · · · · · · · ·	A. G	ottvald Murray
Pipe v Pipe v	wrench wrench			F. Б. Е. ॄ I	Corbin Enderes
Plow, Plow	ange wr wrench wrench bed burn Gang harrow a natic-des	ttachm	ent	and A	. Sifler Mahan
Pneun Dallak	natic-des	patch-t	nbe sys	tem '. H. V	Volever
Ponsn Pool 1 Potate	ing compregister. digger	and se	parator.	.М. Т.	Helms
Power	-factor c	ontrolle	V. J. I	Junham J. l	et al. Pearson
Power Printe	r's regis	ter boo	eenams kW.	m (2 pa K. I . F. Bri	Icrman Icrman Igmann
chec	17				. 1521111
Printi:	ng plate ng press	s, App:	aratus .	V.	Royle Fenner
	ng press ng-press			11.	E Kier
Dropol	ng rolls, ler guar			E. 1	Mertens
Pulp : Pump.	strainer. Fluid-a Suction			B. Tha B. W.	raldsen Haskell
Pump, Pump, Puzzle	Fluid-a Suction	etnated 	air	. S. С. S. Н. F	Laidley reeman
Raur Rait	ioint			J	Wolfe
F (2) 1	OTHER :			AL ALOU	PELISELL
Railwa	oint splin ny-joint ny struct ny struct ny switch ny tie ny tie g drum. finder. Portab et mecha (2 pats.	eure	R. A	. Neat Reinoch	herland l et al.
Railwa Railwa	ly switch	h	L	. O. Mel	Kenney ousseau
Railwa Railwa	iy-switci iv tie	C	. B. Ri	ce, Jr., M. Th	et al. reewits
Railwa Rakin;	iy tic g drum.	c.	E. and	R I C. H.	White
Range Range Ratelie	nnder Portablet mecha	le cook	ingJ.	G. A. I	xitchen Thoms
Razor Recept	(2 pats. tacle ocating)	C. I	I. Ocur	npaugh Gray
Record	ocating ling and	meenan Lindica	ism iting de H. S.	H. II evice Dolbey	et al.
Reel Refrig	ling and	machin	es, Abs	L. Yo	ungren or am-
mon: Rocket Rod b	ia-absori t uller	11011		Э. Бис А. L. I D.	ackard Covev
Rolling	; nuetal,	Compo	site roll	for	Lentz
Rope-c Rotary Rubbe	erating ia-absorp mller g inetal, elimbing r engine r and th	e like a	ind the	F. P. obtainr	Nichols nent of
by-p puri Pubbo	roducts fication	therefu	om, M	anufact Preyfus	ure or et al.
Rubbe	cuginc r and th r and r shoes. Compas on handl clamp. rock, Tr untirattli holder. Lumber Balance Weighir Self-dm constru Envelop. g materi delinter, Milling g machin g-machin g-machin g-machin g machi	Manufa	W.	P. Me f. E. C.	Geouch Gavin
Rnler, Sad-ire	Compas on handl	le, Det	achable	J. V	. Manz . Pinel
Sand:	rock, Tr	eating	bitnmin I	ous 1. F. W	'illiams
Sash a	intirattli boldor	ng devi	ce, Wir	idow Hamn	arlund
sash Sash 1 Sash 1	ock. Wir	ndow			. Way
Saw, . Saw s	Angle wage	I	. II. W	oodcock	carroll
Saws, Scale, Scale.	Balance Weighin	scoop.	F.	Λ. W. .G. M.	Kelley Mayer
Scoop, Screen	Self-din constru	nping b	andF	. A. W.	Kelley Bauer
Sealin	envelop. g materi	ial for	bottles. C. and	.s. E. &c V. E.	Smith
Seed Seed.	lelinter, Milling	Cotton cotton.		.W. E. .II. E.	Worth Hawk
Sewin Sewin Sewin	g macnii g-machir g-machir	ae 1e attac 1e attac	chment.	W. A. F. Button	Bayer hole
Sewin	g machi	ne, Bli	ndstitel	. E. J.	Boyler
Sewin men	g-machir t	e butt	onhole-s E. J	w. A. ewing . Boyle	attach-
Sewin tach	g-machir ment	ne fold	ing an	d guidi C. T. M	ng at- IcKane
Sharp	norder. ening ma	ichine,	Plowsh	n. H. are .L. B	Heslet
Shears Sheet-	for cut metal st	ting m	etal for bott	C. V les, jar	Vachter s. &c
Shock Shoc	g-maching maching maching maching ment. holder. ening maching	and unl	a. L. V	verssen: J. B. S	nanner chuman Skorge
Shoe-r Shoe	epairing upper	impler	nent	s. Fo	glesong Smith
snuttl Shutti	epairing upper e eyes, e-race c	Blank over	for sel	ı-thread C. .M. Me	Glover Caffrey
Sifter Sifter,	Aslı			Е. М.	Omberg Buhlig
Sign Sign Sign	Advertis	sing		G. L M. S	voetley Clapp Graskin
Sign. Signal	Advertis Electric applian ing devi plate a eess for	ce, Saf	ety	E. A. I. W. A.	eopoldt Woods
Signal	ing devi plate a	ice. Ele	ctrical. like, I	.J. G. Electroc	Schafer hemical
SHYCE	ess for	cleanin	ള ബിപ്	polichin	Q*

Skull cutterSleigh brake	E. M. Lamora
Sleigh kµee	.F. P. Moritz .F. B. Leopold
Smoke consumer	C. D. Leonard J. W. McNeal
Snap hookF Soap-dispensing machine (2	E. Schartow
Soap-shaving device (2 pats	G. F. Shaver G. F. Shaver
Soldering machine	C. W. Graham
Skull cutter. Sleigh brake. Sleigh knee. Sleigh knee. Sluice gate. Smelting furnace. Smoke consumer. Snoke consumer furnace. Snap hook. Foap-dispensing machine (2) Soap-shaving device (2) pats Soldering machine. Solvents, Manufacture of solvents, Manufacture of solvents, Manufacture of solvents, Physics arrester. Spark arrester. Spark plng. Spark-plng connector and sy	Nanton et al. 3. Kennington .II. E. Maher vitch
Speed indicatorR. J. Huspike	tchinson et al. .A. L. Barns
Speed indicator. R. J. Hu Spike. Spinning and twisting machi Spinning machine Spinning-machine twister-he Stalk chopper W. Stamps, Machine for preparing	.F. S. Culver E. Dixon
Stalk chopper	D. O. Pease A. J. Brown
tageL. Stands forming and discharge	M. Parkhurst
Station indicator and signal	V. HoxieC. W. Faris
Steam trap Steering apparatus, Boat	J. W. Lytton
Steering apparatus, Gyrosco	pic
Stamps, Machine for preparing tage. L. Stanchion. Staple forming and discharge Station indicator and signal Steam generator. Steam trap. Steering apparatus, Boat. D. Steering apparatus, Gyroscoly Stencil-cutting machine. Still. Solar. Stock gnard. S. P. Stoker, Mcchanical. E Stoking tool. Stool, Knockdown. E. P. an Storage tank.	A. M. Brosius Foster et al. D. Nowkirk
Stoking tool	.W. C. Fahy d A. J. Pierce
Stove, Ash-sifting	.P. McDonald entrating ring
Storage tank Stove, Ash-sifting. Stoves or ranges, Heat-cone for gas or vapor L Strainer. Street-sweeping machine H. R. and O Sweep attachment. Tail holder. Telephone receivers, and th for S. Telephones, Sanitary appliar Temperature-equalizing meth ratus. Thermometer, Electrical-alar	W. L. Reed
Sweep attachment	J. C. Lundell D. Ball
forS. Telephones, Sanitary applian	K. Rothschild ace for
Temperature-equalizing meth	od and appa- II. B. Gale
Thermostatic alarm	C H Pool
Time detector, Watchman's	.D. II. Lentz (Reissue)
Tie plates, Composite rolls Time detector, Watchman's Time recorder. Time leak alarm, Pneumatic. E. Tire mold. Tire, Resilient. H. M., T. J., W. J., and matic. Tires shoes, Core for manuficatic. Tires, Mechanism for manuficatic. Tone modifier. Tool holder. Tool holder. Tooth, Artificial. Tooth facing, Detachable. Torpedo fork. O. Torpedo or bomb. V. Toy, Electric.	W. H. Bundy
Tire mold. Tire, Resilient	J. W. Thropp
Tire shoes, Core for manufamatic	neturing pneu-
matic	T. Sloper E. McLaren
Tool rest, CombinationC. Tooth, Artificial	B. Lawrence F. J. Claypool
Tooth facing, Detachable Torpedo forkO. Torpedo or bomb	.G. W. Patten S. Obenchain C. T. Turubull
Toy, Electric	A. Hnck M. Robinson
Track and means for support Track and track hanger, Su	rting same .II. L. Ferris spended
Torpedo or bomb	l M. J. BeattyT. F. Kelly reight
Transmission mechanism, Fr	J. F. Murdock ictionalB. J. Carter
Transom lift Transom lift Truck, Jack	E. E. Bell L. II. Dyer O. H. Ames
Truck, Railway Trunk Tube-bending machine	A. M. Clark L. Doll J.: C. Wilson
Turbine Turbine for water meters Turn table for stone-polish	B. Stevens J. M. Burton
purposes	J. Ratcliffe V. Chipperfield
Typewriter shift frames, Bra	.A. E. Zumpe ace mechanism T. L. Knapp
Typewriting machine	J. Z. GlenzingII. II. Steele
Truck, Jack. Truck, Railway. Trunk. Trunk. Tube-bending machine. Turbine for water meters. Turbine for stone-polish purposes. Type case. V Typewriter-platen-checking of the formula of th	.C. Gabrielson .A. G. Snyder or. C. Holland
Typewriting-machine indicate Typewriting machines, Paper Vacuum sweeper. Valve gear Valve gear for engines. Valve, Rotary gas-engine. Valve, Train-line-venting. Valves of gas engines, & frming up the	er carriage for J. H. Taylor .F. B. Shafer
Valve gearValve gear for engines Valve Bofary gas-engine	T. C. Sewell C. D. Parker .W. E. Ewart
	F. A. Pierce c., Device for A. C. Sargent
Vanlt. Burial. Vehicle brake, Automatic. J Vehicle driving gear, Motor	J. Bermel . N. Lawrence
Vehicle mud cleaner	Z. G. Leigh J. D. Aton
Vehicle wheel	J. A. Toohey J. E. Keily
. Intator, intectromagnetic	H Thordarson

NTIVE AGE.
Wagon-box and hay-rack remover J. O. Johnson Wagon rack. J. Welfle et al. Wall rack. M. Lowenstein Washing machine. H. S. Judd et al. Washing machine. G. C. Dunham Washing-machine closure. H. S. Jndd Water boiler. W. H. Buteher Water heater. J. J. Newton Water power, Apparatns for ntilizing wastc. W. T. Nieholls Water-tube boiler. A. Worthington Weaving device, Hand. A. Putman Weaving without cards, Electric jacquard machine for figure. A. Regal Weedless hook. E. Doddridge Wheel rim, Vehicle. G. Webb Wheels, Runner attachment for
Wagon-box and hay-rack remover
Issued February 14,1911.
MECHANICAL PATENTS. Aerial machine

MECHANICAL PATENTS.
Aerial machineR. W. Stewart
Aerial machineR. W. Stewart Aerial navigationJ. Means AeroplaneW. R. and E. E. Case Air-cushionJ. G. Hilton Air-screenH. H. Cummings Airship, MilitaryJ. E. Cooper Alarm system, ElectricalA. Goldstein Alarm system, Sprinkler, A. Goldstein et al. Animal-trap.
Aeroplane
Air-cushionJ. G. Hilton
Air-screen
Airship, MilitaryJ. E. Cooper
Alarm system. ElectricalA. Goldstein
Alarm system, SprinklerA. Goldstein et al.
Arinal-trapL. N. Larson Animal-trapJ. W. Mendenhall Ar-nealing apparatusF. II. Daniels Antiseptic compositionE. D. Reed Antiskidding deviceE. B. Stimpson
Animal-trapJ. W. Mendenhall
Arnealing apparatusF. II. Daniels
Antiseptic compositionE. D. Reed
Antiskidding deviceE. B. Stimpson
Arch-supporter
T. Hughes et al.
Automobile starting-crankL. Michaels
Antomobile starting mechanism
L. M. Jenson
Automobile tail-light and illuminated num-
ber, CombinedF. S. Stafford
Automobiles, Testing-stand for
I. M. Upperen
Awning G. Ross
Baling-press
Barometer, Aneroid
Barrel-cover fastenerF. B. Joy
Antiskidding device. E. B. Stimpson Arch-supporter T. Hughes et al. Automobile starting-crank. L. Michaels Automobile starting mechanism. L. M. Jenson Automobile tail-light and illuminated number, Combined. F. S. Stafford Automobiles, Testing-stand for I. M. Upperen G. Ross Haling-press. G. W. Pearson Barometer, Aneroid. G. Lufft Barrel-cover fastener. F. B. Joy Barrels, Apparatus for the manufacture of J. Stankovich Barrette, Puff. W. S. Bechtold Battery-box. A. H. Brandon Battery tank. Storage H. Lesley Bearing, Antifriction- II. Hess
ofJ. Stankovich
Parrette, Puff
Battery-boxA. H. Brandon
Battery tank. Storage
Bearing, Antifriction
Bearing, Roller sideJ. F. O'Connor
Bed
Bed and stretcher, Combined. E. J. Jardin
Bed-rail fastenerL. P. Orr
Bed. Recess
Bed-spring frame
Bearing, Antifriction
Bedsteads for supporting bed-covers. Frame
adapted to be attached to O F Brunelle
Reer Prenaring II Holzer
1964 VI T Manag
If the relation of Schuermann
adapted to be attached to. O. F. Brunelle Beer, Preparing
H C Ruchan
Pinding mechine Tehlot C E Taylor
Placting poodlo attachment I F M Harris
Placebing composition A Stiegelmann et al.
Post C. H. Sowyon
The first of the f
Boat-releasing mechanismr. Eriksen
Beller inruace, SteamG. S. Gallaguer
Boller, superneater, and feed-water heater,
Combined
Boat-releasing mechanism. F. Eriksen Roller furnace, Steam G. S. Gallagher Boiler, superheater, and feed-water heater, Combined
Dellars (in struction of W. II. Dielars
Delting mechine
Bolling-machine
Bookense, Combined. G. H. and S. Griswold
Paring-1001 holder
Troftle-ning apparatus
Dotte Non-remisible W. H. C. Wood
Mottle, Non-remiable
Bookease, Combined. G. H. and S. Griswold Poring-tool holder H. E. Hull Pottle-filling apparatus R. Briggs Bottle, Non-refillable W. D. C. Wood Bottle, Non-refillable W. H. Spellmon Bottle-washing machine H. J. Broecker Bowling-alleys, Pin-spotting device for A. W. Tisdale Box H. B. Walter Box-cover J. O. Main Box-front fastener C. E. Hendrix
Bowning-aneys, Pin-spotting device for
D H. D. Walton
Box
Description of the Hondrick
Box-front lastener
Braiding and similar machines, Carrier for
Dealers (2 mate)
Brake-rod jaw (2 pats.)
Brush, Dusting E. S. Winn
Daniel Barretoin manifold O W II
Brush, Fountain markingC. W. Howe
Brush, Fountain marking,C. W. Howe Brush-knifeC. M. Tooley
Brush, Fountain marking,C. W. Howe Brush-knifeC. M. Tooley Brush-stapling machineG. S. Murdock
Brush, Fountain marking C. W. Howe Brush-knife C. M. Tooley Brush-stapling machine G. S. Murdock Buffer-block H. C. Buhoup
Brush, Fountain marking,C. W. Howe Brush-knifeC. M. Tooley Brush-stapling machineG. S. Murdock Buffer-blockH. C. Buhoup Bnggy-topC. Gordon
Brush, Fountain marking,C. W. Howe Brush-knifeC. M. Tooley Brush-stapling machineG. S. Murdock Buffer-block
Box-cover. J. O. Main Box-front fastener. C. E. Hendrix Braiding and similar machines, Carrier for A. Petersen Brake-rod jaw (2 pats.) L. A. Hoerr Brush, Dusting. E. S. Winn Brush, Fountain marking. C. W. Howe Brush-knife. C. M. Tooley Brush-stapling machine. G. S. Murdock Buffer-block. H. C. Buhoup Bnggy-top. C. Gordon Bull-staff. G. A. Richardson Bntter and lard block cutting machine
Brush, Fountain marking C. W. Howe Brush-knife C. M. Tooley Brush-stapling machine G. S. Murdock Buffer-block H. C. Buhoup Bnggy-top C. Gordon Bull-staff G. A. Richardson Butter and lard block cutting machine
Butter-compound mixer J. H. Davis
Butter-compound mixer J. H. Davis
G. A. Bingham Butter-compound mixer. J. H. Davis Cabinet, Record R. M. Vick Cabley, R. S. Willer
G. A. Bingham Butter-compound mixer. J. H. Davis Cabinet, Record R. M. Vick Cabley, R. S. Willer
G. A. Bingham Butter-compound mixer. J. H. Davis Cabinet, Record R. M. Vick Cabley, R. S. Willer
G. A. Bingham Butter-compound mixer. J. H. Davis Cabinet, Record R. M. Vick Cabley, R. S. Willer
G. A. Bingham Butter-compound mixer. J. H. Davis Cabinet, Record R. M. Vick Cabley, R. S. Willer
G. A. Bingham Butter-compound mixer. J. H. Davis Cabinet, Record R. M. Vick Cabley, R. S. Willer
Butter-compound mixer J. H. Davis
G. A. Bingham Butter-compound mixer. J. H. Davis Cabinet, Record R. M. Vick Cabley, R. S. Willer

Calk-formerE. N. Can	. Childs et al.
Can-head cutting and formin curling machine. E. Can-opener. Can-tester. Cans. Making seamless-body.	V. Swangren E. A. Coll C. Werner
······································	E. Schildhauer
Candle emitting a colored light Cane and stool, Combined Car and wagon, Hopper Car-bolster construction, Rail Car brake, Mine Car-coupling V. Car-door fastener A. Car door, Grain J. E. Car-door hanger W. Car emergency stopping device Car-fender J. Car fender, Street-railway Car-replacer	J. J. Paris .C. K. Probes
Car brake, Mine	J. R. Carmer T. Stacey V. A. Palmer
Car door, GrainJ. E. Car-door hangerW	Meyers et al. T. Thornley
Car-fender. J. Car fender, Street-railway Car-replacer.	P. Geraghty P. N. Landine E. Derosa
Car-root	. E. Knepper
Carbureter. N. Carbureter. Carbureter.	T. HarringtonJ. B. SeagerJ. M. Sailer
Carbureter. Carpet-sweeper, Vacuum Cash-register. Cash-register.	J. B. Kelly .C. G. Lundin J. Blatz
Casket construction	J. S. Stewart C. F. Wetmore M. Wilkerson
Car-ventilating system	H. Brabrook Sanford et al. ttachment for
Chip-breaker	F. W. Becker J. F. Wolvin E. L. Zahn
Churn, Aerating	V. G. SchroderT. S. Leese Combined
Churn-operating mechanism	J. Steinberg H. Wiley et al.
Cleaning-fluid-dispensing app	J. L. Wagner aratus
Clock-case, Collapsible Clock, Electric self-winding	J. W. Ellis llenbach et al.
Clock, Self-winding electric. Clock, Watchman's Clothes-pin	R. L. Hight R. C. Rose J. G. Hilton
Clutch mechanism for drawi the likeB. Clutch, Pnenmatically-operate	ng-presses and Adriance et al.
Clock-case, Collapsible. Clock, Electric self-winding. W. H. Ka Clock, Self-winding electric. Clock, Watchman's. Clothes-pin. Clutch, Friction- Clutch mechanism for drawi the like. Clutch, Pucumatically-operate Coal crusher, Soft. Coat, Storm- (2 pats.) Collar pad, Horse- Collar-supports, Adhesive con	A. V. Hannifin J. H. Wiestner . W. S. Barker
Collar-support. Collar-supports, Adhesive con	H. Till aponnd for
Colter, Rolling. Commutator. Compressed-air device. Concrete and cement construct	W. L. Paul W. A. Dick A. McKnight
Concrete and cement construct Concrete buildings, Construct	W. Henderson
Concrete and cement construct Concrete buildings, Construct G. Condenser (2 pats)	M. Lehlanc L. D. Lovekin D. Seeberger
Conveyer, Excavating Copper, Hardening	Hamilton et al.
of ears of (2 pats.). S. E. and Counter-gnard. Crane, Horn-	W. W. Morral W. J. Noon
Conveyer, Excavating— Copper, Hardening R. A. I. Corn, Machine for removing of ears of (2 pats.). S. E. and Connter-gnard Crane, Horn— Cultivator Cultivator, Rotary Cultivator-sweep Current-motor Current-motor	R. W. Wise
Current-motor	C. S. Doney G. E. Gilman P. Fath
Cut-off, Rain-water	C. Smith et al. C. W. Carson E. Muller
Denating-toolE. F. a Dental-engine handpiece Dental motor Dental work	nd H. Pawsat F. W. Dean W. E. Butler H. D. Best
Detinning and degalvanizing Diamonds, Apparatus for a	Serap A. S. Ramage regrinding and
Cnrrent-motor. Curtain-fixture. Cut-off, Rain-spont. Cut-off, Rain-water. Cut-off, Rain-water. Cntting apparatus. Cycle frame, Motor- Deflating-tool E. F. a Dental-engine handpiece. Dental motor. Dental work. Detinning and degalvanizing Diamonds, Apparatus for a polishing perforated. Display appliance. Display-board. Diving-snit attachment. Dock, Floating.	I. L. BradfordW. A. FittsE. B. Petrie
Door-check	H. Wilcox
Door construction, Cellar Door hanger and track, Com Door lock, Sliding Door-opener. I Door-signal. Draft attachment. Draft-evener Drill-jar Drill-steel-clamping means.	W. E. Schadel G. M. Blair
Door-signal. Draft attachment. Draft-evener	R. F. Davis J. W. Grove W. W. Swan
Drill-jar Drill-steel-clamping means J. H. and	H. L. Sinclair
Drinking-tool	F. B. Chapman
Dust-arresting and air-purify	W. E. Dwyer device W. E. Dwyer
Drill-jar Drill-steel-clamping means J. H. and Drilling-tool Drinking-fountain, Poultry F. Dust-arrester and air-purifice Dust-arresting and air-purify Dust-pan Elaterite, Treating Electric furnace Electric furnace.	J. C. Ross H. I. Wood H. Hoff
Electric furnace. Electric furnace. Electric-lighting system Elcctric machine, Dynamo H.	E. M. Fitz G. Berentsen
·	

Electric machines, Magnetizable wedge for dynamoJ. M. Barr Electric meterW. II. Pratt	
Electric meter. W. H. Fratt Electric switch. F. W. Kurtz Electric taplet. N. Klein	
Electric meter. W. H. Fratt Electric switch. F. W. Kurtz Electric taplet. N. Klein Electric transformers, Testing. M. C. Rypinski Electrical-distribution system J. L. Woodbridge Electrical-distribution system. J. Bijur Electrical socket Waterproof	
Electrical-distribution systemJ. L. Woodbridge Electrical-distribution systemJ. Bijur	
Electrical socket, Waterproof E. H. Freeman Engine-frame	
Engine guide, TractionW. Meacham Engine spark-plng, Internal-combustion-its	
Engine guide, Traction	
Engines, Device for rapidly stopping com- pound steam- K. Linck	
Engines, Magneto-machine for use in connection with the ignition systems of in-	
nection with the ignition systems of internal-combustion	
Ensilage-cutter. W. H. Preston Envelop-machine G. P. Taylor Envelop-opener J. Reveis	
Etching by electrolysis on relief or intaglio. A. D. Lapointe	
Evaporating apparatus, Mintiple-enect	
Excavating-machineH. Walter et al. Explosion-motorL. L. A. Seguin Expression and tempo indicator W. G. Betz	
Extension-table A. S. Shapiro Eye-shield G. Moritz	
Fan attachment	
Fence machine, Wire F. H. Nullmeyer Fence machine, Wire W. N. Parrish Fence-post	
Evaporator J. Dinckels Excavating-machine H. Walter et al. Explosion-motor L. L. A. Seguin Expression and tempo indicator W. G. Betz Extension-table G. Moritz Fan attachment J. E. Gilson Faucet, Combination W. A. Fleming Feeding device, Automatic J. J. McGuigan Fenee clip, Wire-F. H. Nullmeyer Fence machine, Wire-W. N. Parrish Fence-post R. S. Jones Ferro-terrie hydrate, Blackening browned. J. T. Carriek Fibers dyed with vat dyestnffs, Bucking or bleaching F. C. Theis File, Slip- H. B. White	
bleaching F. C. Theis File, Slip	
Fining devices, Follower-block for paper A. T. Weiss et al.	
Filter, Gum- C. O. Erikson Finish-remover. C. Ellis	
Fire-engine, Chemical H. M. Minnis Fire-escape D. Israel Fireariu J. M. Browning	
Firearm, AutomaticE. E. Redfield Firearm, Recoil-operated. J. M. Browning Firearm, Repeting	
Fireproof construction, Block-holder for H. Sehwickart	
Floor surfacing, cleaning, and polishing machineR. and W. Stipe	
Fluid heater and cooler (2 pats.)	
Filing-folder. D. A. and W. G. Howell Filter, Gum. C. O. Erikson Finish-remover C. Ellis Fire-engine, Chemical H. M. Minnis Fire-escape D. Israel Firearnu J. M. Browning Firearnu, Recoil-operated J. M. Browning Firearnu, Recoil-operated J. M. Browning Firearnu, Repeating E. E. Redfield Fireproof construction, Block-holder for H. Sehwickart Flask W. C. Bogenschutz Floor surfacing cleaning and polishing machine R. and W. Stipe Fluid heater and cooler (2 pats.). Fluoroscope C. E. Campbell Fly-killer W. H. Whitehead Fly-trap T. J. Rogers Flying-machine J. B. Shainline Flying-machine J. B. Shainline Flying-machine A. J. Beanregard Flying-machine A. J. Beanregard Flying-machine Wheeled carriage for Flying-machines, Wheeled carriage for H. L. A. E. and H. O. Short Fob attachment, Safety C. H. Allen Food-choppers, Bone-sawing machine for E. Back	
Flying-machine B. Shatimae Flying-machine J. Anderson Flying-machine A. J. Beanregard	
Flying-machine (2 pats)A. H. Friedel Flying-machines, Wheeled carriage for H. L. A. E. and H. O. Short	
Fob attachment, SafetyC. II. Allen Food-choppers, Bone-sawing machine for	
Food attachment, Safety	
Furnace P. L. Crowe	
Furnace-grate. J. Beck Furnace-setting. P. L. Crowe	
Europeas Prohester and reducer for elec-	
Eusee Railway signal I. Niditch	
Game apparatus. M. Oates Game apparatus. J. F. Hayes et al. Game, Pool. F. A. Beltran Carment-class D. J. Scott	
Gas, Apparatus for the production of water	
Gas-burner, IncandescentL. T. Alton Gas eut-off, AutomaticC. A. Woods	
Gas generator, GasoleneM. F. Sparks et al. Gas-igniter	
Game, Pool. F. A. Beltran Garment-clasp D. J. Scott Gas, Apparatus for the production of water H. E. Smith Gas-burner H. J. Solliday Gas-burner, Incandescent L. T. Alton Gas eut-off, Automatic C. A. Woods Gas generator, Gasolene-M. F. Sparks et al. Gas-igniter C. B. Stilwell Gas-liquetying apparatus for demonstration purposes W. P. Schneider Gas-meters, Detachable seamless diaphram for H. F. Frick Gas-producer head G. G. Gray Gases, Apparatus for determining dust and moisture in L. A. Touzalin	
Gas-producer headG. Gray Gases, Apparatus for determining dust and	
Gases of high oxidizing efficiency. Produc-	
Gate	
Gate	
Governor for gas-eightes, etc., F. C. Ohn Governor, Pneumatic	
Grain-shockerJ. Yanzick, Jr., et al. Graphitizing (2 pats.)C. F. J. Forssell Graphitizing (2 pats.)C. F. J. Holeich	
Company of all	
Grinding-machine, Mutuspindie	
Grinding-mill. J. X. Bosch, Jr. Gun, Air. W. J. Burrows	
Greaser, Elevator-rail, W. A. Garvens et al. Grinding-machine, Multispindle	
Haumor Flectric R S Smith	
W. L. Bryant W. L. Bryant Grinding-mill. J. N. Bosch, Jr. Gun, Air. W. J. Burrows Hair-curler A. A. West et al. Hamo-fastener. L. A. Baxter Hanmer, Electric. R. S. Smith Hand, Artificial. L. Aydt Harrow and cultivator, Combined riding H. Smith Harrow and cultivator, Convertible	

Hat-pin fastenerR. L. Raynor Hats. coats, etc., Rack forA. J. Mason Headlight-udjuster, Automobile	Photographing and developing apparatus, CombinedF. E. Oiler Piano-key lockW. G. Betz
Headlight, Auto E. J. Hewling Heat by means of superheated steam, Trunsmission of F. Jensen	Picker. W. Oliver Picture-enlarging device or appararns L. J. Deible Pipe-cleaning machine. W. E. Clow
Hemp-stripping machineV. R. Barrientos HingeJ. Lezzine Hinged seatE. G. Dann	Pipes, Tool for removing obstructions in L. A. Cornelius Piston for reciprocating engines, Sheet-
Holsting and conveying apparatus support. T. S. Miller et al. Holdback-strap adjusterS. Blodgett Hop-straining deviceG. E. Laubenheimer	metal
Hopper, DistributingE. A. Mann et al. Hopper, DumpingC. Knhn Horse-boot, AntislippingW. H. Stahl Horseshoe and calk thereforJ. W. Miller	and depositing
Horseshoe and calk therefor. J. W. Miller Horseshoes, Bur-removing punch for	Plow, Engine gang
Hull constructionW. E. McNellie, Jr. Ice-cutting machineJ. S. Lambert Lee-making apparatus. Concentric-circular-	Pneumatic conveying apparatus
ceil. G. T. Voorhees Ice-producing apparatns, Artificial- P. F. Stein Illusion, Novelty. A. L. Black	issue)
Impulse-wheel	ly-controlled (2 pats.)A. Smidh Preserving and shipping receptacle L. Anerbach et al.
Insulating structure. A. B. Reynders et al. Insulating-tube. C. L. Fortesche Journal-bearing. L. H. Hartmann Kaleidoscope. G. M. Dongall	Pressure gage. PneumaticO. Olsen Pressure-governor, Automatic W. J. Richards Printer and register, TicketO. A. Brown
Kite. II. Peuvot Knotter. R. H. Moore Lamp, Antomobile. C. W. Harris	Printing machine, FabricJ. Macadam Printing machine, TicketT. M. Vaughan Propeller-operating meansI. B. Rolka
Lamp-burner. E. L. J. Davis Lamp, Folding candle- J. W. Ellis Lamp socket, Electric- J. S. Stewart Lamps, Carbon-holder for arc- W. N. Selig	Propulsion of shipsH. A. Mavor Pulley and shaft protectorP. Blomstrom Pulverizing-machineW. F. Trenary PumpW. R. Thompson et al.
Lamps, Pull-socket for incandescent elec- tricA. Weber, Sr. Last-support and last-mlocking device.	Pump and the like, Centrifugal and tur- bine
CombinedG. G. Schelter Lathe-gearingF. K. Hendrickson Lathes, Steady-rest for shafting W. J. Muncaster	Pump. CentrifugalW. F. Trenary Pump for vacuum-cleaners, SuctionJ. C. Luden Pump. ForceF. L. Robertson
Leather-work, Electrically-heated press for . E. N. Chandler Letter-box signal attachment	Pump-governor. E. M. Carr Pumping apparatus F. C. Weber Purifier C. W. Clark
Light-screen for bedsteadsJ. B. Beatty Lighting apparatus, Globe-holder for J. H. Goss et al.	Quilting-frame.L. TranthamRall-anticreeping deviceE. M. SmithRall-joint.E. GieselmannRail-joint.C. C. Ross
Lightning-rod. C. E. Yarian Liquid-tank P. Okey Locomotives, Rail-flushing mechanism for . J. W. Chrrie	Rail tie-plate and chair, Guard
Lubricating deviceJ. D. Conner Lubricating systemW. J. Schlacks LubricatorJ. E. Hughes	Railway-rail stay. J. M. Scott Ratchet-wrench. E. M. Wicker
Lumber-stacker	Register. A. Lusnardi Rib-boner. C. M. Maisel Ringing-key. E. R. Hobbs Rings. Device for use with M. Zimmermann
Mail-bag catcherS. A. Simmons Mail-bag receiving and delivering device W. W. Kilpatrick Mail-carrying deviceJ. J. Tuttle	Reck-drill. D. S. Waugh Rock from concentrating-mills, Apparatus for disposing of waste. H. R. Wahl Rolling-mill. F. C. Biggert, Jr.
Mail-pouch-transferring apparatus	Rotary engineR. Anderson et al. Rotary engineB. F. Augustine Rotary explosive-engineJ. W. Dawson
apparatus for emptying. D. D. Weschler Manifold-mold. C. Gorman Manure-loader. W. Skakel Manure spreader and loader. C. F. Way	Ruling-machine guide. R. A. Magill Sad-iron J. Jowsky Safety-pin J. M. Wright Sash-lock D. E. Sampson
Marker attachment C. W. Hans Wattress, Revetment C. Condie Wattress, Tarrace Von Below	Sash, Window. E. McElaney et al Saw. Seroll F. J. Seivert Saw-setting device. A. D. Goodeil
Measuring device, Adjustable. S. M. Teeter Metal rods or bars, Apparatus for use in twisting L. Hartel et al. Middlings-purifier J. II. Smelzer	Saw-tableE. J. Osburn, Jr. Scaffold-bracket, LadderM. Zinsmayer Scaffold. Painter'sJ. Berg Scale register, WeighingG. J. Dye
Mine safety deviceP. Darabos Mold and making the sameJ. D. Brown Mep-making machineA. Lackey Mertise-lock, Tubular.H. E. Fendring et al.	Scale, Spring- C. H. Colson Scale, Weighing W. N. Gilbert Scaling device. M. Copet-Hardenne Screw-drivers, wrenches, etc. Ratchet
Mortising-machineJ. Zetter Moth-repellent holderM. W. Costello Motor-control apparatusD. Wald et al.	mechanism for (Reissue)W. B. Lane Serew-machine, MultispindleE. C. Henn Selecting mechanismC. Butterfield
Motor-controlling apparatus, Electric	Sensitive layer-carriers, Device for exposing. P. Kaemmered Sewing-machine. W. J. Butler Sewing-machine, Rotary R. K. Holtmann
Mower, Lawn	Sewing-machine, RotaryR. K. Holymann Sewing-machine rufflerA. H. De Voe Sewing-machine ruffling mechanism A. H. De Voe
Music or like leaf turnerG. W. Bischof Musical instrument, Mechauical (2 pats.) H. P. Ball	Sewing-machine shuttleW. R. Blair Sewing-machine work-gage, Buttonhole B. T. Leveque Sewing machines, Wax-pot for shoe
Neckwear-fastener. W. H. Hart, Jr. Nozzle, Spray. C. Edgerton Numbering-machine. S. Hollingsworth Nut-lock. J. Popp et al.	E. Smith Shade and curtain-pole fixture, Window A. Grubba Shade-guide. N. D. Stilles
Nut-lock E. R. Gilbert Odontometer G. E. Siverling Orchard-heaters, Automore electric igniter	Shade machine, WindowE. O. Engberg Sharpening device for edge-tools
for T. Chapman Ore-classifier F. G. Janney Ores. Treatment of gold-bearing antimony. J. Jones et al.	sharpening knives of chall-cutters, Apparatus forE. Turpin Sharpening taps and dies, Machine forA. H. Graef
Ozone-generating apparatusC. Knips et al. Pail, Disinfecting garbageD. Goldman et al. Point, Mineral	Sheave-block J. T. Johnson Shock-absorber D. F. Kilgour Shoc. Therapeutic E. W. Burt Shoc-trimming machine W. B. Keighley
Pajamas	Shutter-workerW. G. Crawford Side-arm supportM. B. Fountain Sign, ChangeableT. M. Genolin
Panel-raising machineJ. F. Wolvin Paper, Embossing wallH. W. Sanderson Paper-feeding mechanismT. W. Hebert Paper receptacles, Machine for making	Sign, Interchangeable illuminated
Paper sheets or the like, Device for cuttingL. Werner et al.	Signaling device R. E. Story et al. Signaling system, Selective (2 pats.) J. Erickson
Paper-tube machineryC. F. Jenkins Parer and slicer, Vegetable. W. Gallihugh Pattern-drafting deviceG. H. Cardell Pattern-plateJ. Bayer	Skate, Roller L. Zamboni Skid
Pattern-plate	Smoke-consumer for furnaces. A. F. Divok Scap reservoir, LiquidJ. F. Rohowits Spark-arresterJ. F. Romig
Perch, PoultryF. Shay	Spike (Reissue)J. L. Jossart

Photographing and developing apparatus, Combined. F. E. Oiler Piano-key lock. W. G. Betz Picker. W. Oilver Picture-enlarging device or apparatus L. J. Deible Pipe-cleaning machine. W. E. Clow Pipes, Tool for removing obstructions in L. A. Cornelius
Pipe-cleaning machineW. E. Clow Pipes, Tool for removing obstructions in
Piston for reciprocating engines, Sheet- metal. H. Weisner Plane, Floor. W. J. Faber Plant-protector. J. Edwards Plastic or adhesive mixtures, Producing and depositing. C'. E. Akeley Players or the like, Coin-control attach- unent for automatic. P. J. Dreher
Plug, Waste A. Beck Pneumatic cleanerC. B. Foster et al. Pneumatic cleaning implementR. C. Baker Pneumatic conveying apparatus
Postal card, Puzzle C. B. Rosenberger Power-motor C. M. Rhodes Power-transmission mechanism, Magnetical- ly-controlled (2 pats.). A. Snndh Preserving and shipping receptacle. L. Anerbach et al.
Pressure gage, PneumaticO. Olsen Pressure-governor, Automatic
Pressure gage. Pheumatic
Pump. Force- F. L. Robertson Pump-governor F. L. Robertson Pump-governor F. C. Weber Purifier C. Weber Purifier C. W. Clark Quilting-frame F. L. Trantham Rail-antfcreeping device F. M. Smith Rail-joint F. Gieselmann Rail-joint C. C. Ross Rail tie-plate and chair, Guard- J. W. Sephenson Railway-crossing S. G. Davis Railway-rail-fastening device E. T. Ford et al.
Rail-joint C. C. Ross Rail tie-plate and chair, Guard- J. W. Sephenson
Railway-crossingS. G. Davis Railway-rail-fastening device E. T. Ford et al.
Railway-rail-fastening device E. T. Ford et al. Railway-rail stay J. M. Scott Ratchet-wrench E. M. Wicker Register A. Lusnardi Rib-boner C. M. Maisel Ringing-key E. R. Hobbs Rings. Device for use with M. Zimmermann Rock-drill D. S. Waugh Rock from concentrating-mills, Apparatus for disposing of waste H. R. Wahl Rolling-mill F. C. Biggert, Jr. Roofing, Composite R. Anderson et al. Rotary engine B. F. Augustine
Rolling-mill
Retary explosive-engine. J. W. Dawson Ruling-machine guide. R. A. Magill Sad-iron. J. Jowsky
Sash, WindowE. McElaney et al
Saw-setting deviceA. D. Goodell Saw-tableE. J. Osburn, Jr. Scaffold-bracket Ladder W. Zinsmayer
Scaffold, Painter'sJ. Berg Scale register, WeighingG. J. Dye Scale, SpringC. H. Colson
Saw-setting device. A. D. Goodell Saw-setting device. A. D. Goodell Saw-table. E. J. Osburn, Jr. Scaffold-bracket, Ladder. M. Zinsmayer Scaffold, Painter's. J. Berg Scale register, Weighing. G. J. Dye Scale, Spring C. H. Colson Scale, Weighing. W. N. Gilbert Scaling device. M. Copet-Hardenne Screw-drivers, wrenches, etc., Ratchet muchanism for (Reissue). W. B. Lane Screw-inachine, Multispindle. E. C. Henn Selecting mechanism. C. Butterfield
mochanism for (Reissue)
Selecting mechanism
Sewing-machine ruffler. A. H. De Voe Sewing-machine ruffling mechanism
Sewing-machine work-gage, Buttonhole B. T. Leveque Sewing machines, Wax-pot for shoe
E. Smith Shade and curtain-pole fixture, Window
Shade-guide
Sewing machines, Wax-pot for shoe
Sharpening taps and dies, Machine 107 A. H. Graef Sheave-block. J. T. Johnson Shock-absorber. D. F. Kilgour Shoe, Therapeutic. E. W. Burt Shoe-trimming machine. W. B. Keighley Shutter-worker. W. G. Crawford Side-arm support. M. B. Fountain Sign, Changeable. T. M. Genolin Sign, Interchangeable illuminated. E. S. Stafford
Shatter-worker
Signaling and alarm apparatus, Electrical
Signaling deviceR. E. Story et al. Signaling system, Selective (2 pats.)
Skate, Roller L. Zamboni Skid. C. W. Levalley Smelting ores yielding a volatile metal, Apparatus for (Reissue). W. M. Johnson Smoke-consumer for furnaces, A. F. Divok Soap reservoir, Liquid J. F. Rohowits Spark-arrester. J. F. Romig
Smoke-consumer for furnaces. A. F. Divok Soap reservoir, LiquidJ. F. Rohowits Spark-arresterJ. F. Romig

Spinning and doubling machine spindle.
Spinning and donoing machine Spinning. W. T. Smith Spinning-machine bobbin. A. H. Briggs Spriukling apparatus, Liquid. J. Collinge Spriukling-machine. E. Tomer Sprocket driving mechanism. S. A. Crowder Stage apparatus. J. A. Van Sant Starch, Laundry. E. Weingartner Starch soluble in cold water, Manufacturing. J. Kantorowicz L. Kantorowicz L. Kantorowicz
Stave-jointer
Stoker W. H. H. Stinemann Stoker mechanism I. L. Crow et al Stove, Base-burning heating W. T. Eastes Stove, Gas. C. B. Stilwell Stove, Heating A. Philo Stovepipe-joint P. H. Graham Strainer-holder J. H. Knapp Strancture, Reinforcing J. F. Russell Superheater W. F. Pettigrew Surfacing-machine steering gear. R. and W. Stipe Surveying instrument D. C. Harrison Suspenders J. C. Hodges Suspenders, Garment J. M. Webber Sweeper J. H. Woodbury Swing R. H. King Swingletree J. F. Royals Switch G. E. Palmer Syringe J. J. Brin Syringe J. H. Sheets Syringe J. F. Milligan
Surfacing-machine steering gear
Snspenders, Garment I. M. Webber Sweeper J. H. Woodbnry Swing R. H. King Swingletree J. F. Royals
Syringe. J. J. Sheets Syringe J. F. Milligau Table J. M. Horton
Syringe J. F. Milligau Table J. M. Horton Table-top protector J. L. McKay Tap attachment, Barrel M. J. Zwosta et al. Telegraph signals, Apparatus for determining the direction of space O. C. Roos Telegraph-sounder H. T. Johnson Telephone selector or ringing device, Anto-
Telephone selector or ringing device, Antomatic
Telephone selector or ringing device, Antomatic R. R. IIobbs Telephone subscribers stations, Lock-out for party-line J. Erickson Telephone system A. Nemeth Telephone testing system C. S. Winston Terminal C. E. Luudgren Textile machinery Silver-finnel for J. Cooper Thermometer case, Clinical. J. C. Jenkins Three-throw switch A. Fonrnier Threshing-machine eoncave G. Langehennig Tiling A. Du Montier
Thermometer case, Clinical. J. C. Jenkins Three-throw switch. A. Fonrnier Threshing-machine eoncave. G. Langehennig Tiling. A. Du Montier Tilting rake. I. Skjeldrup Time-switch. C. E. Campbell
Tire, Mechanically-adjustable resilient.
Tobacco-pipe, AutinicotinW. II. Wood Tool, PneumaticH. Schumacher Tools or the like, Throttling device for pneumaticG. H. Gilman Top-fastenerS. B. Thomas
Top, KaliedoscopicE. B. T. Spencer Track manifold sanding deviceJ. W. White TrapD. F. Runion Tree and brush entterR. L. Andrews
Trongs attachment. F. J. Moeller et al. Trouser-snpporter I. S. Perkins Tungsten dioxid, Manufacture of
Turbine
Tire-protective rivet. E. B. Stimpson Tire-rim. Antomobile. G. H. Bogenhageu Tire-setter. B. E. Martin Tire, Vehicle-wheel. C. G. Deming Tobacco-pipe. Autinicotin. W. H. Wood Tool, Pneumatic. H. Schumacher Tools or the like, Throttling device for pneumatic. G. H. Gilman Top-fastener. S. B. Thomas Top, Kaliedoscopic. E. B. T. Spencer Track manifold sanding device. J. W. White Trap. D. F. Runion Tree and brush entter. R. L. Andrews Trolley attachment. F. J. Moeller et al. Trouser-snpporter. I. S. Perkins Tungsten dioxid, Manufacture of Tunnel-lining. Metallic. R. B. Woodworth Turbine. C. Roth Type Typewriters, Paper-carriage feed mechan- ism for T. E. Buschmann Typewriting machine. Z. G. Sholes Typewriting machine. L. C. Myers Typewriting machine. J. F. McBirney Typewriting machine. C. B. Yaw Vacuum-tube. D. M. Moore Valve. A. Watsou Valve (2 pats.). J. V. Schmid et al. Valve for gas-engiues, Governing Valve for water-heaters R. B. Parrott Valve-governor. F. L. Cross Valve Lubricating. C. Senn et al.
Valve
Valve for water-heaters. R. B. Parrott Valve-governor. F. L. Cross Valve. Lubricating C. Senn et al.
Valve-opening device
Vaudeville apparatus. J. E. Nicholson Vehicle F. Kleinvogel Vehicle suspension, Pneumatic. G. A. Murphy Vehicle tou-how holder S. T. Allen
Vehicles, Device for discharging and receiving articles from moving D. D. Miles, Jr. Vending-machineJ. Kriz et al. Vending machine, BottleC. A. Joues Ventilating and Service of the Control
Voting and other machines. Interlocking mechanism for C. H. Ocumpaugh Voting-machine C. H. Ocumpaugh Wall. Outside R. Rollinger
Walls, Device for cutting slits in brick II. Geyer Warfare, Device for use in connection with naval (2 pats.)
Vapor-converters in series, Means for starting
Wheel brake, Vehicle- W. L. Sterling Wheel-grip P. J. Stenson
Window E. Gelbke Window-screen F. W. Tuerk et al. Window-ventilator J. H. Franke Wing-carrier T. L. Cummings Wire nail G. H. Camehl

2888888888888888888888888888888

An Irresistible Bargain

\$1.75 Value for Only \$1.15

ALL FOR ONLY \$1.15

One Year's Subscription for McCall's Magazine, Any 15-Cent McCall Pattern you may select, One Year's Subscription for the Inventive Age

McCall's Magazine

Is a large, artistic, handsomely illustrated hundred-page monthly magazine. It contains sixty new Fashion Designs in each issue. Every woman needs it for its up-to-date fashions, entertaining stories and complete information on all home and personal topics. Over one million subscribers. Acknowledged the best Home and Fashion Magazine. Regular price, 5 cents a copy. Worth double.



McCall Patterns

So simple you cannot misunderstand them. Absolutely accurate. In style, irreproachable. You may select, free, any McCall Pattern you desire from the first number of the magazine which reaches you. Regular price, 15 cents.

The Inventive Age.

A journal of manufacturing industry and scientific progress. The indispensable paper for patentees. Contains matter and information not found elsewhere. Regular price, \$1.00 per year.

DON'T MISS THIS EXTRAORDINARY OFFER. dress: THE INVENTIVE AGE Publishing Co., Washington, D. C.

The DIAMOND

SELF-FILLING AND SELF-CLEANING Fountain Pen.

IT IS AWAY AHEAD
OF ANY OTHER PEN
MANUFACTURED BECAUSE OF ITS SELFFILLING AND SELFCLEANING FEATURES.





Price \$2.00.
Including one year's subscription to "The Inventive Age."

No Lost Time.

No Soiled Fingers.

Address

INVENTIVE AGE PUB'L. COMPANY, WASHINGTON, D. C.

HENLEY'S TWENTIETH CENTURY BOOK OF

Recipes, Formulas & Processes







Edited by GARDNER D. HISCOX, M. E.

Price, \$3.00 Cloth Binding

\$4.00 Half Morocco Binding

800 large Octavo (6 x 9½) Pages.

Contains over 10,000 Selected Scientific, Chemical, Fechnological, and Practical Recipes and Processes,

Including Hundreds of so-called Trade Secrets for every business.

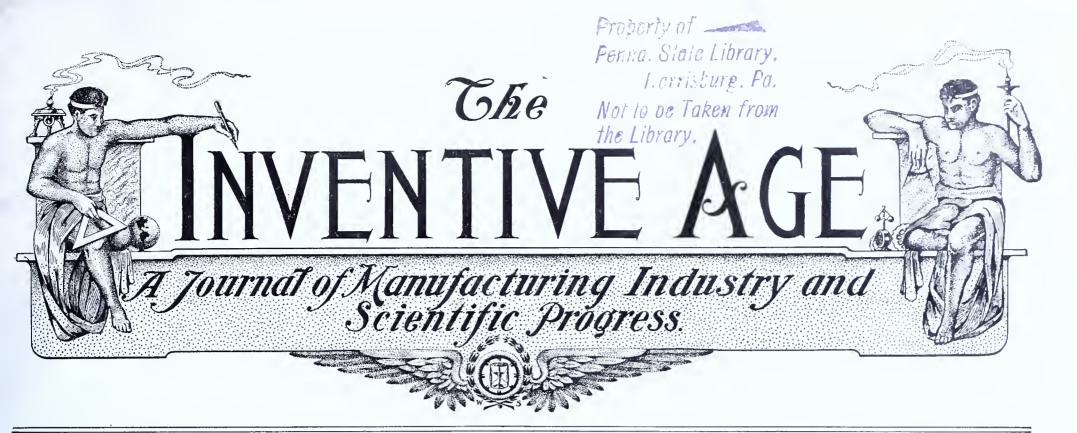
This is THE BOOK everyone should have at his command who seeks PRACTICAL, ACCURATE KNOWLEDGE and GUIDANCE in his every-day work, as no book has ever been published which so fully meets the multifarious requirements of the factory, the workshop, the laboratory, and the household. In preparing the work for so exacting and numerous a class of readers the Editor has exerted every effort to present only information which is practical, accurate and modern.

Address

INVENTIVE AGE PUB'L. COMPANY WASHINGTON, D. C.

SEND FOR OUR FREE CATALOGUE OF BOOKS FOR INVENTORS AND MECHANICS.

Address: THE INVENTIVE AGE PUBL'G CO., 918 F St., Washington, D. C.



Vol. XXIII. No. 5. }

WASHINGTON, D. C .-- MAY 1, 1911.

SINGLE COPIES 10 CENTS.

STEERING BOATS AND TORPEDOES BY WIRELESS.

By Frank C. Perkins.

During the past three or four years, ing the rudder of the motor boat oper- stalled between the masts on the bow many experiments have been made in this country and abroad in utilizing wireless telegraph apparatus for steering boats and shooting off guns, as well as in starting and stopping motors at a distance. German scientists were enabled in 1908 to utilize electric waves for switching lamps on and off, for starting and reversing electric motors and for operating alarms by means of a wireless apparatus. In one instance a small steam engine was set in motion, and made to let off steam when desired by the devices located at a distance from the controlling station.

An electric steering equipment was invented in 1909 at the Elektrophysikal Laboratorium of Wirth, Beck and Knauss, in which a motor boat was steered to the right and left without difficulty, the controlling apparatus being located on the shore. A large electric motor boat capable of carrying from 30 to 40 passengers was equipped during 1910 with the long distance switching devices and controlling apparatus. The accompanying illustration shows the lighthouse and wireless antennæ from which the electric waves were sent in steering the electric boat. This boat was started and stopped and reversed by the wireless apparatus, as well as steered to the right and left. Many experiments of great interest were made, electric signal lamps being lighted, alarm apparatus placed in operation and signal shots fired, while the boat traveled over the water under perfect control, without a single collision, although a hundred small boats surrounded it.

The long distance wireless switching apparatus of the Tele-dynamo Gesellschaft was operated with a current of 4 volts and two amperes, the electric wave receiver working with a current of 1.5 volts and 1.10 milliampere from a distance of 18 miles, while the electric steering apparatus controll-

and from 65 to 80 volts. The wireless

ated with a current of one half ampere and stern and have a length of 13 feet.

In the same line is the invention of antennæ on the motor boat are in- a Frenchman, to steer torpedoes by



LIGHTHOUSE EQUIPPED WITH WIRELESS APPARATUS.

wireless. The use of this device in warfare may lead to startling results. A huge battleship, costing ten million dollars and taking five years to build, with a crew of a thousand men, is entirely at the mercy of one of these tiny engines, steered by a human will from a distant and safe point, and capable of destroying the ship in a few moments. The solution of the problem, says a technical journal, is particularly delicate because the aerial electric waves which form the bond of connection between the destroyer's will and the engine of destruction have been hitherto the best protection of the ship, which could always frustrate the plans of the enemy by emitting other waves which would annul the action of those employed by the enemy and thus make the attack futile. But this condition will not persist if the inventors now at work on the problem succeed in their efforts. Especially successful in this line has been the device referred to above, which was recently tested on the Seine. The experiments showed great facility of evolution of the torpedo in the river. The torpedo is of a form different from that used by the navies of the world. It has a body of cylindrical shape, sharply pointed at both ends and containing. in addition to the explosive charge, a motor and all the mechanical and electrical organs used for propulsion and for wireless electrical control, with the exception of the screw propeller. Above and attached to the main body of the torpedo by vertical rods is a similar but slightly smaller pointed cylinder, which serves as a float. This is in turn surmounted by supports for antennæ, by which the electric waves are received. The entire weight of the torpedo is about four tons, nearly one half of which is represented by the motor of two or three hundred horse power.

The most important organ of the torpedo is the receiving device, called

the tele-commutator, but this alone would be unable to solve the problem of wireless control, which requires special apparatus for the protection of the receiving instrument from the disturbing action of sparks produced by other instruments enclosed in the same hull, and especially from these waves emitted intentionally or accidentally by vessels or coast stations in the vicinity.

The principle upon which the operation of the apparatus depends is delaved contact, which is employed in one way or another in all devices for wireless control of machinery. When the signal sent by the transmitting station is received by the apparatus in the torpedo, the machine there puts itself in readiness to act. The telecommutator contains a lever which turns about its pivot under the action of the electro-magnet. The end of this pivoted lever carries a pawl which causes a ratchet wheel to advance by one tooth every time the circuit is closed. The shaft of the wheel carries a contact spring, and as the wheel turns, this makes contact with metallic segments which correspond to mechanism in the radio-commutator. This latter is the device used for transmitting, and it has a keyboard and copper strips, contact with which completes the electric circuit.

The problem to be solved is to cause contact with the segment corresponding to the maneuver desired, without making contact with the intermediate segments. This is effected by means of the retarding apparatus which is attached to the end of the lever. This apparatus contains a lever, one end of which dips into a mercury cup. When the electro-magnet is traversed by the current, the arm of the pivoted lever rises and carries with it the other lever, breaking contact with the mercury. The latter lever then falls by its own weight, taking over two seconds to re-establish contact with the mercury. During the interval the contact spring may pass over the ten segments by the operation of the pivoted lever and the electro-magnet, without transmitting any current as the circuit is broken. Hence wave trains separated by shorter intervals do not affect the control apparatus. Currents are sent out by the transmitting apparatus and received by the wireless detector, but have no effect on the tele-commutator. Circuits are completed by magnetic couplings, by means of which the motor of the torpedo governs the movements of the rudder and reversible propeller. The torpedo carries a charge of two thousand pounds of explosive, or seven or eight times as much as that carried by the torpedoes now generally employed. This one charge would be ample to send the largest vessel built to the bottom of the ocean.

To keep themselves posted in the progress of the arts in which they are interested, inventors and manufacturers should subscribe for the INVENTIVE AGE, which publishes a list of all patents issued each month. The low subscription price and the character of the publication entitle it to the support of all the inventors of the country.

BRITISH INVENTIONS IN 1910.

The annual report of the British Comptroller-General of Patents, Designs and Trademarks was issued as a Parliamentary paper on March 25. The report shows that the subject of locomotion in general is undoubtedly the most prolific source of invention, particularly now that aviation may fairly claim to be considered as part of it. If we examine in detail the developments made during the year, the number of inventions relating to wheels for vehicles appears to be the most striking feature. In connection with motor cycles, considerable attention has been directed to improvements in the application of clutches to facilitate starting, and to variablespeed gears. Also there have been many devices for preventing the sidesplashing of mud by vehicles. The subject of aeronautics, although showing a slight diminution on last year, is still one of the most prominent in the field of inventive activity. Efforts are now being directed mainly towards perfecting the details of aeroplanes, such as the balancing, controlling and landing devices. But, in addition, the development of the science is making itself evident in other fields of invention.

One of the most striking examples of this is seen in the increase in the number of internal combustion engines adapted for flying machines, particularly in those engines having revolving cylinders. Aeronautics have also made possible a new mode of attack in time of war, and to meet this danger inventors have been giving much attention to guns and projectiles for destroying aerial craft. There has been a considerable increase in inventions relating to textile industry. In spinning, this increase appears to be generally distributed: but it is interesting to note that special processes and machines for the preparation of fibres from exceptional plants (other than cotton, hemp, and flax) have been much in evidence. In weaving, the past year has been characterized by the application of automatic weft-replenishing arrangements to pattern-weaving looms.

Much attention has been directed to the subject of automatic or semi-automatic telephone exchanges. It seems probable that the time has now arrived when such methods will be employed on a larger scale than in the small private exchanges to which they have so far been confined in this country. The recent increase of the tax on matches in Germany has apparently acted as a prompt stimulus to produce a substitute, for a noticeable number of applications from that country (mainly under International Convention regulations) were received in connection with automatic pocket lighters.

Tobacco smokers were also catered to in the numerous inventions relating to the making up of tobacco into cartridge form suitable for direct insertion into the pipe, and to pocket cases for containing such cartridges,

and in many instances for assisting also in the charging of the pipe. The fact that considerable work has been done in attempting to improve the terminal exhaust or undirectional type of steam engine is perhaps worthy of mention. A valuable class of life-saving inventions relates to means attached to miners' lamps for testing for firedamp, whereby each miner is in possession of a gas tester. Much attention is being devoted to the problem of the manufacture of indiarubber by synthetic chemical processes. The use of ultra-violet rays in the sterilization of water and other liquids and in the maturing of wines, is a further example of the manner in which the higher sciences are being applied to meet every-day requirements.

The applications accompanied by provisional specifications which increased so largely in 1909, fell off again 1910, the number filed being only 20,768, as compared with 21,563, a decrease of 785. On the other hand, the number of applications accompanied by complete specifications rose from 9,050 to 9,620, an increase of 570, and considerably the highest on record for any one year. The complete specifications filed on previous provisionals number 9,485, as compared with 9,655, a decrease of 170. The total number of complete specifiations received during the year was thus 19,105, as against 18,705, an increase of 400. The total number of complete specifications (provisional and complete) received was 39,873, as compared with 40,258, a decrease of 385.

The largest number of applications made on any one day was 154 on March 15, and the smallest 58 on August 6.

The applications received from women inventors number 671, as compared with 648 in 1909.

In 1910 there was a decrease in the number of applications received from England and Wales, Scotland, Ireland, and most of the British colonies. The applications from India, New Zealand and the Orange River Colony, however, show an increase. As regards foreign countries there was an increase in the number of applications received from Austria, Belgium, Brussels, Denmark, France, Germany, Hungary, Italy, Norway, Spain, and the United States, and a decrease in those from Egypt, Holland, Russia and Sweden.

The number of designs applied for during the year was 30,872, exclusive of 1,873 sets of designs, as compared with 24,816 single designs and 1,596 sets in 1908. The term "set" includes any number of articles ordinarily on sale together, irrespective of the varieties of the size or arrangement in which the particular design may be shown on each separate article. In classes 13, 14 and 15 (printed or woven designs on textile goods), the number of applications made was 11,759, as compared with 6,574 in 1907, an increase of 5,185, or nearly 79 per cent. Of these applications about 10,532, or

89 per cent., were made at the Manchester branch office. The number of designs refused registration, on account of their similarity to designs already registered, was 591.

During the year 861 applications for registration of designs (including the above-mentioned 591) were objected to by the Comptroller. The objections, other than those on account of their similarity to designs already registered, were chiefly on account of want of subject or want of substantial novelty. The number of designs on which the copyright was extended at the end of five years for a further period of five years was 1,028, or 4.7 per cent. as compared with 877, or 3.9 per cent. in 1909.

The number of applications made in 1910 for the registration of trademarks (including 106 applications made to the Cutlers' Company of Sheffield) was 10,623, as compared with 10.880 in 1909. During the year 6,066 trademarks were advertised and 5,722 registered. The Patent Office made a profit of \$500,000 last year, though it has a staff of 670. It had 153,707 readers in its free library, and added 5735 volumes to its shelves. It sold 271,914 specifications, 9,195 abridgement volumes, and 18,262 official journals.

The Mechanism of Electric Signs.

The most picturesque feature of modern advertising is by electricity. To visitors to one of our great cities, it is a source of unending interest to watch the streams of liquid, the lightning, smoke, waving flags, sky rockets, etc. that decorate the dark skies at night, and that are merely electric advertisements. They give an impression of complicated mechanism, and many have wondered how such striking effects are attained. The affair is really simple, a small motor driving the machines that make and break the circuits feeding the hundreds of tiny lamps that come on and go out at moments exactly predetermined. The wiring, however, that connects the different groups to their respective switches, the contacts of which are made by the turning wheels, twists in and out like the lines of a complex puzzle.

The simplest electric moving signs are the kind illuminated one moment and dark the next. They are operated by "double-pole" carbon machines. Then come the signs consisting of words, in which the letters are given one after another, spelling the whole out. The machine used for this type is known as the "single-pole," flashing one letter at a time until all are on, holding them lighted for a few seconds, and then letting all go out together.

It is the spectacular, animated advertising displays, however, which are sure to attract attention. They demand greatingenuity in assembling. The sky rocket provides a good subject for description. In operating this display, several different types of machines are required, known as lightning, single-pole, high-speed, and series-carbon types. In watching this display, you see the streak start

upward, curve over at the top, and appear to light the cluster, which rains a shower of fire. Then the wording of the advertisement appears.

The method of accomplishing this is told in a recent numer of Popular Mechanics. The streak generally consists of 20 groups of lamps, each group in direct line but on separate wires and numbered in rotation. Each wire goes to an individual switch on the wheeled machine, which is so constructed as to throw the several groups on in succession. It lights up the lowest group first, then the next above, and so on until they are all illuminated, when they begin to go out, one cluster at a time, in an upward direction. This effect is produced by a lightning-type macbine, which works with such rapidity that the streak appears to travel upward like an actual sky rocket.

For operating the cluster at the top, the single-pole machine is used. This is generally a machine containing about six switches, and the colored lights of the cluster are divided into that many groups, each group controlled by an individual switch. These groups are not thrown on togetber, but are brought on unevenly by the different sized wheels of the lightning machine without regard to uniformity. If uniformity were desired, a single large switch could be used, but this would not give the bursting effect desired.

The showers are worked with two types of machines, the high-speed and the single-pole. In this instance the single-pole machine is known as the controller, and consists of six switches. The entire number of lamps used in the shower is divided into six sections crossways, and each section is connected to an individual switch. The top section is thrown on first, followed by the others. At the same time the single-pole machine throws the lamps on in downward rotation. the high speed machine meanwhile keeping them in continuous motion as fast as they come on, in an exact reproduction of the falling sparks from a bursting rocket. This is accomplished by arranging all the lamps in lines across, the rows being numbered 1, 2, 3 and 4, and repeated downward the full length of the shower. All the lamps on the No. 1 rows, of which there are several, go to the switch designated as No. 1, and all the other rows are arranged the same way. Were only the single-pole machine used, the effect would be only one drop of fire falling in each line of the shower; but through the agency of the high-speed machine, the effect is that of a continuous downpour.

Other effects produced in a similar manner by arrangements of lamps are those of a grate fire, where the flames, red, white and amber, appear to be continuously rising from a pile of coal. All the lamps are arranged in series, and are operated by the highspeed type of machine. Another device is a man in a rain, holding an umbrella against a continuous downpour, his scarf and coattails blown about by the wind. Aeroplanes appear to fly, water is poured from a bottle into a glass, an automobile race is shown, and other scenes attract the eye, and serve as effective advertisements.

THE INVENTIVE AGE contains sound advice to inventors and patentees. For lack of such advice many have lost money. Subscription price, one dollar a year.

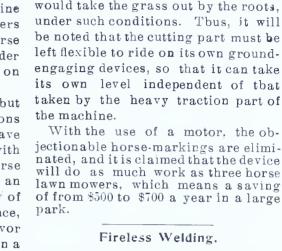
GASOLINE LAWN MOWERS.

THE gasoline motor has reached such a state of perfection, its control and reliability having been thoroughly demonstrated with the motor boat and automobile, that ladies and even children may operate it witbout the slightest difficulty.

The accompanying illustration shows a motor driven lawn mower ready for operation, consisting of a double cylinder valveless reversible engine of the Lackawanna two-cycle type, mounted for driving the grass cutting machinery. These machines are so simple in operation that a lady can operate one with as little difficulty as an automobile. One of the first motor lawn mowers to be developed was a steamer, which bas now been superseded entirely by the two-cycle internal combustion motor driven machine. This first steam lawn mower was heavy and cumbersome, the boiler

A similar machine has been designed for parks and large estates, powerful enough to maintain the proper cutting speed up to 25 per cent grade with a cutting capacity of from 1 to $1\frac{1}{2}$ acres per hour. This machine weighs one ton and has drive rollers 21 inches in diameter, a 12 horse power motor of the two cylinder vertical type being used, working on the four-cycle system.

It will be not only instructive but interesting to compare the conditions of parks and golf courses which have utilized the motor lawn mower with others which have employed horse drawn motors. It is held by an authority who has made a study of the conditions that, in every instance, the results have been greatly in favor of the motor driven machine, that in a short time the quality of the turf was greatly improved, and that the finer



bear heavily upon the ground in order to get hold and in so doing may at

times sink one-half inch or more, and

should a wet spot be encountered. one

end may go deeper than the other. It

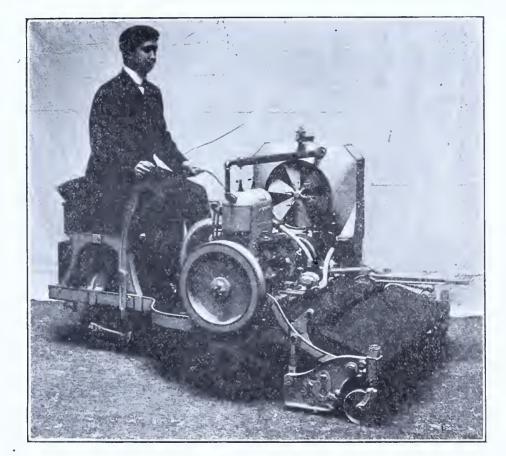
will be seen that it would be dis-

astrous should the cutting part do

this, as the stationary knife is nor-

mally so close to the ground that it

The new metbod of welding metals without the use of fire-although not without the use of heat-has been demonstrated recently in the Department of Agriculture. It consists of using a mixture of iron oxide and aluminum fillings mixed in a little crucible that holds about a pint and a half. On top of this is sprinkled a spoonful of magnesium flash powder, such as is used in taking photographs at night. This is fired with a match, and when it starts the oxide and aluminum mixture to burning it makes a molten liquid that is a good deal hotter than white hot iron. White heat is known as "welding heat" in iron working parlance. The ends of the pipe to be joined are squared off perfectly true and fitted together. Then the break is surrounded by a little two-piece iron mold with a hole in the top. The two pieces of pipe are gripped by a vise that can be screwed up so that the squared off ends are crowded together at will. When the flash powder is fired, there is a blinding sizzle in the crucible and the iron oxide is turned into molten metallic iron. The melted mixture is poured into the hole in the mold around the pipe and instantly raises the ends of the pipe to a welding heat. The vise is then screwed up and the ends of the pipe crowded together about onequarter of an inch. Then the iron mold is knocked off. A jacket of metallic iron which had been placed about the weld is also knocked off, and the pipe is shown with no sign of a break, and really stronger at the joint than elsewhere, because it is a trifle thicker. The process takes about four minutes.



being fired with gasoline. The com- and more hardy dwarf grasses were pact construction of the single cylinder gasoline lawn mower of the same capacity as the steamer is indicated lawn mower with its rolling effect. in the illustration, the motor being powerful enough to drive it up a ten per cent grade without difficulty. The single cylinder two-cycle machine weighs only 1,000 pounds, the four horse power motor requiring from one-half to three quarters of a gallon of gasoline per hour. This measures $5\frac{1}{2}$ feet in length and 4 feet in width with a height over all of 2 feet 3 inches, and it cuts the grass a width of 35 inches, the diameter of the driven roller being 15 inches.

For heavy work on large lawns with steep grades, a two cylinder vertical motor of 8 borse power is utilized, this mower being of larger construction, to cut a width of 40 inches at a single trip, its length being $6\frac{1}{2}$ feet and its width $4\frac{1}{2}$ feet with a height of somewhat over three feet. It weighs 1,300 pounds and has a fuel consumption of from one to 1\frac{1}{4} gallons of gasoline per hour.

found to thrive better in the firm soil brought about by the use of the motor

It is said that on golf courses there was found to be a more general uniformity of texture throughout, with no decided line of demarkation between the putting green and the fair green, but a leveling of irregularities of surface by the motor lawn mower, producing a more satisfactory course, where the ball could be depended upon to play truer.

It is held that if the motor is run at a speed greater than five or six miles an hour, it will travel so fast that the grass cannot get into the revolving cutter, hence it is not necessary to provide the complicated mechanism of several speeds: one speed is enough, provided there is sufficient power in the motor to drive the machine up the grades required.

By far the most important requirement in a motor lawn mower is flexibility between the traction and cutting parts. The former must of necessity

How to Get Copies of Patents.

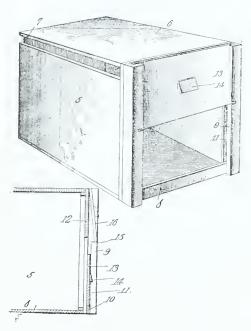
THE INVENTIVE AGE prints each month a list of the patents granted by the Patent Office. This list includes the name of the inventor, the title of the invention and the date of the patent. Anyone can procure through THE INVENTIVE AGE a copy of any patent included in the list, by giving the data and enclosing ten cents in stamps for each copy. There is no better way of keeping yourself informed about the progress of the arts than by scanning the list each montb and ordering copies of patents.

CLEVER NEW PATENTS.

Trap Nest.-Truck.-Copy Holder.

Trap Nest.

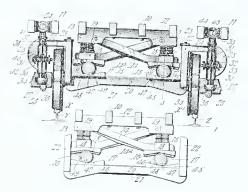
The increasing attention paid to poultry raising throughout the country lends interest to a recent invention hy Philip H. Edwards, of Colorado Springs, Colo., which consists of a nest with a door, the latter automatically closing when the hen enters the nest, so that she may lay or set in peace, and without danger of outside interruptions. The door in this device slides in guides and drops by gravity, and does not rely on levers or tilting platforms, but is so arranged that the entrance of the fowl disengages the door from its supports and permits it



to drop into position. As shown in the drawings, which give a perspective view and a vertical longitudinal section of the nest, the latter has its front end open, and at each side of this end are guide stiles 9 with grooves 11, connected at the hottom by a sill and at the top by a fixed wall section. Working freely in the grooves is the door 13 of the nest, having a handle 14 to raise it when it is desired to open the door. When so opened, the lower edge of the door rests on shoulders 15 formed on the stiles 9, the grooves heing gradually widened from the at which the shoulders are formed, so as to permit of the door assuming an inclined position when its lower edge engages with the shoulders. When the door is raised, the opening is exposed to permit the entrance of the hen, and as she enters, the lower edge of the door is engaged and the door is lifted shoulders and is permitted to drop hy thus at once securing the fowl against disturbance and keeping her within the nest until the latter is opened hy the attendant. It will he seen from the sectional view that when the door is lowered, a space is left between the two parts of the front wall so as to provide ventilation and also permit the interior of the nest to he inspected without the necessity of raising the door.

Truck.

There is a tendency on the part of most railway cars to wahble from side to side, both on straight and on curved lines of track, and a truck especially designed to prevent this wahhling has been patented by Chas. W. Underwood, of Crowley, La.; F. S. Button and L. L. Reynaud heing part assignees. The inventor provides a secondary truck adjacent to each of the main trucks, and these secondary trucks are so constructed that the weight of the car on them results in their wheels and axles heing moved so as to hring one wheel into engagement, at its flange, with the corresponding track rail. The supplemental trucks of each car are reversed with respect to each other, so that one wheel of one truck will hear against one track rail while the opposite wheel of the other truck will hear against the other rail, resulting in the corresponding wheels of the corresponding main trucks hearing against the corresponding track rails. In other words, while ordinarily the wheels at one side of a car will come into contact with the corresponding track rail and the car he thrown hodily to hring the wheels at the other side into contact, at their flanges, with the other track rail, thereby producing a wahhling motion, the supplemental trucks described will cause the main truck wheels to fill in, so to speak, the space between the track rails so as to obviate this motion of the car.

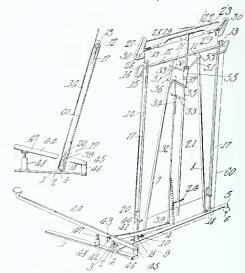


The car sills 11 (see cuts, showing the weight applied to and lifted from the trucks) are supported on the supplemental trucks, and the car sills 10 rest on a casting 12 which has open ends, hetween the walls of which is pivoted arms 14 and 14a, these arms being crossed and one being longer than the other. Each arm is concaved upper ends of the styles to the point heneath and formed with a continuous rih 17. Saddles and springs are provided to act as cushions. The truck body is a casting which straddles the axle 21, and has at each end standards which are secured to a saddle 25, supporting the sills 11. Sleeves are so socketed in the saddle as to he supported for rocking movement, and bodily from engagement with the sliding in each sleeve is a stem, with a spring to cushion the movement of gravity so as to close the opening, the stem in the sleeve. Braces are secured to the heads of the stems and at their other ends to the frame har 35, which has a lengthwise trunnion 43 and seats, in a sleeve 44, supported hetween the heams 11. It will he seen that not only may these beams yield downwardly but also laterally, through the oscillation of the saddle 25. Bearing portions 45 on the truck casting have concaved upper faces, and hetween said portions and the

corresponding bearing head 15 is a roller 47, flanges on which contact with the portions 45 and prevent displacement of the roller with respect to these portions. The rih 17 of the head 15 is seated in a circumscribing groove of the roller, so that the displacement of the heads with respect to the rollers is prevented. Although the under faces of the heads 15 and the upper faces of the portions 45 are concave, they do not form the arc of a circle but have synclinal surfaces of equal area. The tendency is therefore for the rollers to seat in the deepest portions of the concavities. The arm 14a heing longer than the arm 14, this tendency is overcome when no weight rests on the sills 10. But in normal conditions, the weight of the car results in an even greater tendency on the part of the rollers to seat in the deepest portions of the concavities, and since only yielding resistance is offered to this, the wheel at that side of the truck at which the free end of the arm 14a is located, will be forced into engagement at its flange with the side of the head of the adjacent rail.

Copy Holder,

In most copy holders, the plate holding the copy is raised to the desired height and is then released and allowed to drop by gravity onto huffers. This causes a clatter and jar which is annoying, and is detrimental to the copy holder itself. This disadvantage is ohviated in an invention hy Benjamin F. Cole, Kingwood, W. Va. (assignor in part to N. J. Fortney of the same place) which is illustrated in the accompanying cuts, these showing a perspective view and a vertical section. Mounted on the sidehar is a clamp with a transverse har 4 carrying the frame, and a wing holt to adjust the copy. Converging frame memhers 78, have sliding before them a copy holder support 14, with an indicating har 15. Vertical rods 17 act as a guide, and the support is also guided by a rod 21, extending from the cross piece 23 at one end through a perforation in the cross piece 12, to and through a strap 24 at the bottom. The copy is held in place hy a cross bar 26, kept taut with springs and having loops which terminate in trunnions 28 on the ends of the cross plate 23. The holder is elevated by a push bar 32, pivoted at one end in a clutch 33, the free end of which is perforated to engage the har 21 of plate 14. The clutch bites the har 21 so that the upward motion of the push har is transmitted to the har 21 and thus to the plate 14. A clutch 35 pivoted on the frame is held hy a spring so as to hold the rod 21 from downward motion. The transmission lever 39 on the hracket arm 41 has its outer end notched, (one heing deeper than the other) and is operated hy a lever on the bracket arm 42 of the side bar 1. The operating lever 44 is normally fitted in the notch 42, the downward



motion heing then limited hy a screw rod on the side har. So long as the lever is in this position, the plate 14 is raised step by step, by means of said lever. When it is desired to lower the plate 14, the lever 44 is shifted into the other notch, which causes the lever to move out of alinement with the stop 47, and the lower clutch 33 to he raised to escape the upper clutch, making hoth clutches about horizontal and letting the rod 21 slide down through the same, permitting the plate 14 to he lowered. In order that the support shall not fall with a crash, brake shoes are provided, fitting against the rod 21, and pivoted on levers on the frame. A sleeve on the rod 21 is recessed within to receive the hrake shoes, and slotted downward to permit the passage of the levers. When the clutches release the rod and support, the upper clutch hears on the sleeve and raises it. This causes the brake shoes to be thrown tightly on the rod. The greater the downward pressure on the lever 44, the greater the breaking action. This nice regulation of the downward movement obviates wear and tear of the apparatus, and prolongs its effici-

PATENTS

Send Your Business Direct to Washington Saves Time and Insures Better Service.

Trade Marks, Copyrights and Designs.

My office is close to the U.S. Patent Office. Personal attention given-OVER THIRTY YEARS PRACTICE. Book "How to Obtain Patents," etc., sent free. Patents procured through E. G. Siggers receive special notice, without charge, in the-

INVENTIVE AGE

Illustrated Monthly-Twenty-third Year, Terms, \$1.00 a Year.

E. G. SIGGERS,

918 F STREET, N. W., WASHINGTON, D. C.

LATEST COURT DECISIONS IN PAT-ENT, COPYRIGHT AND TRADE-MARK CAUSES.

ST. LOUIS STREET FLUSHING MACH. CO. et al. v. SANITARY STREET FLUSH-ING MACH. CO.

(Circuit Court of Appeals, Eighth Circuit. April 27, 1910. 178 F. R. p. 923.)

1. PATENTS-LICENSES-VALIDITY.

The facts that a license to use a patented device is oral and that it was granted after the application, but before the issuance of the patent, do not render it invalid.

2. PATENTS-VIOLATION OF LIMITED LICENSE -INFRINGEMENT.

A limited license under a patent conveys only the rights defined therein, and if the licensee makes any other or different use, either as to time or place, than that authorized by the license, he becomes an infringer, and his limited license is no justification.

3. PATENTS-CONSTRUCTION AND INFRINGE-MENT-STREET WASHER.

The Murphy patent, No. 736,135, for an improved steet washer, is not a pioneer patent, but covers a combination of elements previously in use, and, while valid, is not entitled to a broad construction; but the range of infringing equivalents must be limited to those which perform the same functions in the same way. As so construed, held not infringed.

LUMBER ANTI-STAIN CO. v. NESTER et al. SAME v. SOUTH ARM LUMBER CO.

(Circuit Court of Appeals, Sixth Circuit. April 5, 1910. 178 F. R. p. 927.)

PATENTS - NOVELTY - PROCESS FOR PRE-VENTING SAP STAIN IN LUMBER-"WEAK ALKALINE SOLUTION."

The Cowles patent, No. 746,678, for undressed lumber and process of preserving same, is for a process and its product, claim 1 being broadly for "that process of treating undressed lumber to prevent sap staining thereof which consists in rapidly applying to the wood a weak alkaline solution to permit said solution to penetrate only that surface depth which is planed off by the usual dressing of the wood." Claim 2 is the same, except that "a weak solution of sodium bicarbonate" is specified. Claim 3 is the same as claim 2 with the additional step of "drying the lumber so treated," while claim 4 is for lumber so treated, as a product. for lumber so treated as a product. Held, that the "weak alkaline solution" of claim 1 includes limewater, which is both within the designation and was within the intention of the patentee, who regarded the rapid appli-cation, and not the alkali used, as the essence of his invention, and that, as limewater had been previously extensively used in the same manner for the same purpose, the claim is too broad and void for lack of novelty; also, that as limewater is thereby recognized as an equivalent of the specific alkaline solution specified in the other claims, although in fact, as proved by use, it is not as efficient, the entire patent is void.

HIGHLAND GLASS CO. v. SCHMERTZ WIRE GLASS CO.

(Circuit Court of Appeals, Third Circuit. Feb. 16, 1910. 178 F. R. p. 944.)

PATENTS — INFRINGEMENT — PROCESS AND MECHANISM FOR MAKING WIRE GLASS.

The Schmertz reissue patent, No. 12,443 (original No. 971,216), for an apparatus and process for manufacturing wire glass, is for an improvement on the so-called 'European' or two-sheet method of making wire glass, and consists in the simultaneity of laying the wire and rolling the first sheet and the close and progressive following of the second roll, casting the second sheet on top thereof. This quickening of the whole operation produces a better welding of the two sheets and an improved result, but the claims, being for an improvement only in the respect stated, must be limited to the the simultaneity of the particular method and the particular mechanical means for prac-

ticing it described in the specification, and cannot be broadened to include other methods or means for accomplishing the same result. As so construed and limited, held notinfringed.

WEED CHAIN TIRE GRIP CO. et al. v. EXCELSIOR SUPPLY CO. et al.

(Circuit Court, N. D. Illinois, E. D. May 20, 1910. 179 F. R. p. 232.)

1. PATENTS-VALIDITY-FUNCTIONAL CLAIMS.

Claims of a patent for means for, or mechanism adapted to, a certain result, and, like functional claims, are not objectionable if limited to the invention shown by the specification and drawings.

2. PATENTS - VALIDITY AND INFRINGEMENT -CHAIN TIRE GRIP.

The Parsons patent, No. 723,299, for a chain tire grip, was not anticipated, and is not for a function, but discloses an operative and useful device, basic to a large extent which required invention: also held infringed.

KUEHMSTED v. FARBENFABRIKEN OF ELBERFELD CO.

(Circuit Court of Appeals, Seventh Circuit. May 11, 1910. Rehearing denied July 7, 1910. 179 F. R. p. 701.)

1. PATENTS — PATENTABILITY — CHEMICAL COMPOUNDS-NOVELTY-EVIDENCE.

That a chemical compound is not a new article of manufacture in a patentable sense is not conclusively shown by the fact of a prior known compound having the same formula.

2. PATENTS-VALIDITY AND INFRINGEMENT

The Hoffman patent, No. 644,077, for acetyl salicylic acid, known medically as "aspirin," is for the product of a new process, which for the first time produced it in a sufficiently pure state to render it thera-peutically available, and is valid; also held

CAMPBELL v. AMERICAN SHIPBUILD-ING CO.

(Circuit Court of Appeals, Sixth Circuit. April 5, 1910. 179 F. R. p. 498.)

1. PATENTS—CONSTRUCTION—PROCEEDINGS IN PATENT OFFICE.

Where an applicant for a patent acquiesces in the rejection of claims presented, and amends the same or substitutes others to meet the objections of the Patent Office, he must be deemed to have surrendered and disclaimed what he thus conceded, and is bound by the limitations so imposed, and it is immaterial whether the office was right or wrong in rejecting the original claims.

2. PATENTS-INFRINGEMENT-CARGO VESSEL. The Campbell patent, No. 675,712, for a cargo vessel, as limited by the proceedings,

in the Patent Office, held not infringed.

LONDON v. EVERETT H. DUNBAR CORPORATION.

(Circuit Court of Appeals, First Circuit. June 21, 1910 179 F. R. p. 506.)

1. PATENTS-FALSELY MARKING ARTICLE AS PATENTED—ACTION FOR PENALTY.

Rev. St. § 4901 (U. S. Comp. St. 1901, p. 3388), which imposes a penalty for every offense of marking upon or affixing to any unpatented article the word "patent," or any word importing that the same is patented, for the purpose of deceiving the public, does not prescribe distinct penalty for each individual article marked, but merely for the offense of marking; and, in order to authorize the recovery of more than a single penalty, the proof must go further than to show the marking of a number of articles, and must be sufficiently specific as to time and place and circumstance to show a number of distinct offenses of marking, although it need not show the specific date of

2. PATENTS-FALSELY MARKING ARTICLE AS PATENTED—ACTION FOR PENALTY.

To authorize the recovery of penalty imposed by Rev. St. § 4901 (U. S. Comp. St. 1901, p. 3388), for marking upon or affixing to an unpatented article a word importing that the same is patented, for the purpose of deceiving the public, such purpose must be proved, and where the article is sufficiently like that described in a patent to permit of an honest belief that it is within the patent, although on a construction of the patent the court is required to rule that it is not, the

question of the intent of defendant in marking it as covered by the patent is one for the

3. PATENTS-FALSELY MARKING ARTICLE AS PATENTED-LIABILITY OF CORPORA-TION "PERSON."

A corporation is a "person," within the meaning of Rev. St. § 4901 (U. S. Comp. St. 1901, p. 3388), which imposes a penalty on "every person" who marks an unpatented article with any word importing that the same is patented for the purpose of deceiving the public, and may be convicted of such

4. WITNESSES - PRIVILEGE - OFFICER OF CORPORATION.

An officer of a corporation is not privileged from giving testimony as a witness because it may tend to convict the corporation of a penal offense.

5. Witnesses - Privilege - Persons En-TITLED TO CLAIM PRIVILEGE.

The claim that a witness is privileged from answering a question cannot be asserted on behalf of a third person.

YOST ELECTRIC MFG. CO. v. PERKINS ELECTRIC SWITCH MFG. CO.

(Circuit Court of Appeals, Sixth Circuit. 1. PATENTS-INFRINGEMENT-ACTS CONSTI-June 7, 1910. 179 F. R. p. 511.)

1. PATENTS-INVENTION-NEW COMBINATION OF OLD ELEMENTS.

There is no invention in bringing old elements into new combinations where each performs the same service as it did in the earlier art.

2. PATENTS — INVENTION — CARRYING FOR-WARD OLD IDEA.

The mere oarrying forward of an original conception, patented, involving only change of form, proportion, or degree, or the substitution of equivalents doing the same thing as did the original invention by substantially the same means with better effects, is not such invention as will sustain a patent.

3. PATENTS-VALIDITY AND INFRINGEMENT-IN-CANDECENT LAMP SOCKETS.

The Perkins patent, No. 626,927, for an incandescent lamp socket, held valid and infringed by one structure which had been made and sold by defendant, but not infringed by other styles.

BERNARD v. FRANK et al.

(Circuit Court of Appeals, Second Circuit. May 2, 1910. 179 F. R. p. 516.)

PATENTS-INJUNCTION AGAINST INFRINGE-MENT-VIOLATION.

A corporation organized by a defendant, who has been enjoined from infringement of a patent, for the sole purpose of escaping the consequences of the injunction, and of which such defendant is an officer, is bound by the injunction, and may be punished for contempt for its violation, although not formally made a party to the suit.

NEUREUTHER v. MINERAL POINT ZINC CO.

(Circuit Court of Appeals, Seventh Circuit. Jan. 20, 1910. 179 F. R. p. 850.)

1. PATENTS-INVENTION-NATURE OF PAT-ENTABLE INVENTION.

A mere carrying forward or new or more extended application of the original thought, a change only in form, proportions, or degree, the substitution of equivalents doing substantially the same thing in the same way by substantially the same means with better results, is not such invention as will sustain a patent.

2. PATENTS — INVENTION — REGENERATIVE RETORT—HEATING FURNACES.

The Neureuther patent, No. 666,390, for a regenerative retort-heating furnace, is for a zinc-smelting furnace differing from the Siemens furnace of the prior art only by increasing the number of ports in the combustion-chamber from one to three and also the number of retorts, is void for lack of patentable invention, especially in view of the building and use of the patentee for several years before the application was filed of two-port furnaces.

STAR MFG. CO. v. CRESCENT FORGE & SHOVEL CO. et al.

(Circuit Court of Appeals, Seventh Circuit. April 19, 1910. 179 F. R. p. 856.)

1. PATENTS-VALIDITY-PRIOR USE.

The commercial use of a machine for more than four years, although its operation was unsatisfactory to the inventor, leading to frequent experiments to improve the combination and finally to the addition of an element of such value that a patent was applied for, was an abandonment to the public of the invention so far as it was embodied in the combination before the addition of such improvement, and invalidates a claim of the subsequent patent from which the new element is omitted.

2. PATENTS—PRIOR USE — UPSETTING MA-CHINE FOR PLOWSHARES.

The Clark patent, No. 734,161, for an upsetting machine for plowshares, claim 1, is void for prior public use for more than two years of the combination claimed therein.

McCREERY ENGINEERING CO. v. MASSACHUSETTS FAN CO. et al.

(Circuit Court, D. Massachusetts. June 24, 1910. 180 F. R. p. 115.)

TUTING.

A bill to restrain the infringement of a patent for a ventilating device will not lie against county commissioners, merely because a contractor for a public building has placed an infringing device in such building, without its having been specified in the contract and without knowledge on their part of the patent, which device has not been used.

2. STATES—STATE AGENCIES-COURTHOUSES INJUNCTION AGAINST USE OF INFRING-

Under the statutes and decisions of Massachusetts, a courthouse is an agency of the state, and county commissioners, when required by statute to build and maintain a courthouse, act therein as representative of the state, and they cannot be enjoined from operating a ventilating apparatus placed in a courthouse by a contractor for its construction, on the ground that the operation infringes a patent.

GULDEN v. CHANCE et al.

(Circuit Court, E. D. Pennsylvania. Jan. 28, 1910. 180 F. R. p. 178.)

1. TRADE-MARKS AND TRADE-NAMES-UN-FAIR COMPETITION IN TRADE-LIMITA-TION OF PACKAGES.

One dealer is not altogether prohibited from copying the style or dress of package gotten up by another under penalty of a suit for unfair trade. It is only where such special marks have become identified in the mind of the public with a certain party's goods, and are manifestly imitated for the purpose of getting away his trade, that this is the case. Not every appropriation, in other words, of the ideas of another, amounts to unfair trade competition. There must be an established right in that which is taken, as well as a practiced deception, before this ensucs.

2. TRADE-MARKS AND TRADE-NAMES-UN-FAIR COMPETITION—IMITATION OF PACK-AGES-USE OF COLORS AND DESIGNS COMMON TO THE TRADE.

This is not to say that, notwithstanding the use of colors and designs common and appropriate to the particular article, a combination of color and style of package may not be so distinct and have become so identified with the goods of some one dealer that a manifestly purposed imitation of them will not be regarded as fraudulent; but only that, before that result is reached, the combination must be so unusual and the imitation so clear that the similarity cannot be other than designed.

3. TRADE-MARKS AND TRADE-NAMES-UN-FAIR COMPETITION - SIMILARITY OF

The adoption and use by defendants, who were packers of olives, of bottles, labels, and caps somewhat similiar to those used by complainant, held not to constitute un-fair competition, nor to evidence any intention of deceiving purchasers, in view of the fact that defendants had been in the business for 30 years, that other packers used bottles of the same or similar design and labels and caps more or less similar in appearance and style, and that those nsed by defendants had many distinguishing features and did not resemble complainant's so closely as to indicate an intentional imi-

MECHANICAL INVENTIONS AND DESIGNS

Patents for which have been procured through the Patent Soliciting Office of E. G. Siggers, Patent Lawyer, Washington, D. C.

William S. Coppers, Belleville, Kan. Car Replacer.—The object of this invention is to provide a car replacer of great strength and durability, adapted to operate at either the inner or outer side of a rail, and capable of adjustment so as to arrange it in different positions to correspond to the position of the derailed wheel; the device being so constructed as to positively carry the flange of the ontside wheel across the top of the rail and canse the wheel to drop into proper place.

Elbert B. Zimmerman, Lincoln, Neb. Wire Stretcher.—The object of this invention is to provide a simple, inexpensive and efficient device adapted to stretch smooth fence wires and eliminate all danger when stretching barbed wire. It is capable of being operated to continuously stretch a fence wire without releasing the wire and allowing the same to slacken. By this device the necessity of stapling the wires to a fence post in order to take a new hold on the wire is obviated. The device can also be used for drawing the two ends of a broken wire together to splice the same.

Charles Mullin, Conway, N. D. Spring Clevis for Plows.—The object of this invention is to provide a device of this character, which is adapted to relieve the plow of strain when it meets with substantial resistance so as to avoid breakage of a plow point or mold board or the straining of the plow beam. In one form of the invention a single spring is made use of, and in the other, two springs. When the clevis is subjected to strain, the parts of the clevis slide on each other, and the springs cushion both the plow and the draft animals and avoid injury and strain to both.

Gottleib Schneider, Bluffton, Ind., inventor; La Vergne B. Stevens, same place, assignee. Fence Post Brace.-This invention is adapted to be applied to the cerner or terminal post of a fence, so as to firmly support the post in an upright position and permit it to withstand the strain incident to wire fences. It is capable of adjustment to tighten either the upper or lower portion of the post, and is provided with threaded operating means, which is capable of ready adjustment to relieve and free the parts should the same become fast through the rusting of the threads. The brace is in every way a most complete and efficient device for the purpose intended.

Mahlon Parsons, Mangum, Okla., inventor: Jesse F. Campbell and George E. Clark, Mangum, Okla., assignees. Folding Chicken Coop.-This invention aims to provide a simple, light, strong and durable shipping crate, adapted to be cheaply manufactured and capable of being compactly folded for returning to the shipper. The device is also constructed so as to be easily cleaned to maintain it in a sanitary condition. It consists of a bottom, foldable sides hinged to the bottom and provided with marginal flanges forming interior recesses, ends hinged to the sides of the crate and foldable within the said recesses and arranged to abut against the flanges of the sides when the crate is arranged for use, and a top hinged to one of the sides.

James H. Barnhart, Modesto, Cal. Hog Trough.—The object of this invention is to provide a simple and inexpensive device, designed for both

the feeding and watering of hogs and other animals, the same being so constructed as to prevent the hogs from getting into it and rooting out or wasting the grain, or soiling or fouling the food, whereby the trough is maintained in a clean and sanitary condition. The device is also constructed so as to enable the hogs to be conveniently fed and prevent them from interfering with the placing of the material into the trough. Means are also provided for uniformly distributing the food to a plurality of separate compartments, which are arranged so as to prevent the animals from laterfering with one another.

Harry J. Dressel, New Orleans, La. Attachment for Street Cars. Two patents.-The inventions were both designed for the purpose of converting an ordinary street car into a pay-asyou-enter car. Each attachment is adapted to be readily applied without necessitating any alteration in the construction of the car. In one form of the invention, an upright post is mounted upon the platform of a car and extends from the top to bottom opposite the door way or entrance into the car. The post is preferably arranged at a point on the platform which coincides with the longitudinal center of the car. An arm is pivoted to the post and is adapted to be swnng diagonally across and toward the entrance to the car so as to engage with either side of the doorway, supporting brackets being mounted at each side of the doorway so as to support the free end of the arm. In this way by throwing the arm ontwardly, it is adapted to engage one side of the doorway and form a barrier to prevent the passenger from passing on the near side of the doorway, and compelling the passenger to pass around the post to the far side of the doorway.

In the other patent there are provided a series of spaced horizontal tubular members, arranged at different elevations at the end of the car at one side of the doorway or entrance into the car, and a guard having bars, equal in number to the said members, which are adapted to slide therein, with the result that the guard may be extended partially across the doorway or entrance into the car, or it may be shoved back out of the way so as to arrange the gnard in a position where it will not obstruct en-trance into the car. The guard may be slid out of place from one end of the car and applied at the other end, when the motorman and conductor change their respective positions at the end of a trip.

William Blanchard, New Orleans, La. Submerged Bridge.—This invention relates to a bridge or viaduct for transportation purposes in navigable bodies of water, and it is especially designed for those localities where the soil is of such a nature that it is practically impossible to construct foundations, unless at prohibitive cost, as for instance along the lower regions of the Mississippi river. The invention provides what may be called a subaqueous viaduct composed of a central river section, mounted on terminal piers adjacent to the shore, and connected with land or shore sections, whereby a complete water tight tubular structure is provided, partially submerged to render the employment of expensive foundations unnecessary, since the buoyancy of the submerged portion is utilized for this purpose. The central river section is braced, strengthened and re-enforced by a novel arrangement of cables for withstanding the various strains to which it is subjected. To this end, the invention consists of a sheet metal tubular structure mounted on a skeleton frame-work and coated with concrete or other protective material, and formed with saddles at its

ends for connection with supporting and retaining piers, and also provided with saddles at intermediate points to which gny cables are fastened, the said saddles forming means of attachment for trassed cables extending longitudinally of the bridge.

Charles R. Alsop, Quincy, Wash. Reversing Gear.—The object of this invention is to provide a simple reversing gear of a novel nature that is very compact, so that it will occupy but little space, is light in weight, is very efficient in operation, and one in which the working parts are completely housed and protected, and yet are entirely accessible, the necessary adjustments, moreover, being accessible without the necessity of dismembering said structure.

Lew L. Walrath, Sacramento, Cal. Sign.—This invention has for its object to provide an inexpensive sign, designed to be employed as a snbstitute for painted, stenciled, or similar signs, and adapted to be quickly changed without destroying the letters, numbers, or other chaiacters employed in the make-np of the sign. It comprises a plurality of flexible sign strips, provided with a series of sign characters and foldable to expose one or more of the same and to provide an inner attaching portion, the strips being successfully arranged in overlapped relation to conceal the unnsed characters of the outer portions of the strips, and paper clips extending across the front of the attaching member and between the inner and outer folds of the sign strips, and having their terminals secured to the back of the supporting

Charlie F. Strnad, Narka, Kansas. Draft Equalizer.—This invention has for its object to provide a draft attachment for plows, for use in connection with a four horse evener, and one which will equalize or balance the draft on the plow and afford increased space for the attachment of a rolling colter. It comprises a plow beam, spaced draft bars connected at their inner ends to the front end of the plow beam and extending laterally therefrom, a flexible connection secured between and extending from the outer end of the draft member to the rear portion of the plow, and a clevis also secured between the draft bars and extending in advance of the same.

Willard W. Allen, Pretty Prairie, Kan. Train Order Delivering Apparatus.-The principal object of this invention is to provide a train order delivering apparatus, adapted to be operated from the interior of an office or station, and capable of enabling an order, message, or the like to be readily obtained by a passing train, and of signaling to such train that there is an order or messsge for the same. A further object is to provide a train order signaling apparatus, capable of automatic operation to successfully present a plurality of order-holding devices in position for removal by an engineer or other trainman, so that in the event of a double header, or a train having two engines, an order may be delivered to each engineer or other persons located at different points on the train.

Benjamin E. Reed, Ridgely, Md. Two patents.—The invention of the first patent has for its object to provide a corn cutting machine, adapted to be drawn by a horse and to cut corn when standing in the field, and capable of retaining the cut corn until a sufficient quantity has been accumulated, and of readily discharging the same, so that the corn will be cut and piled at intervals. The machine comprises a wheeled frame carrying endless chains extending from the front of the machine to a hopper and longitudinally of a pair of inclined guide boards, an adjustable cutting knife for

severing corn stalks near the ground, and a hopper for containing the cut stalks and provided with means for automatically dumping the same after a certain amount has been cut, the capacity of the said hopper being controlled by the operator of the machine.

The object of the invention of the second patent is to improve the construction of corn harvesters, more particularly that disclosed in the preceding patent, and to provide an endless carrier, arranged in advance of the dumping table or platform, and adapted, when the latter is dumped, to be simultaneously operated, whereby all of the corn accumulated at the rear portion of the machine will be carried rearwardly clear of the same, to render the dumping operation complete.

David R. Evans, Florence, Ala. Tire Setting Apparatus.-This invention has for its object to provide a tire setting mechanism intended to take the place of the hydraulic means now employed, which means has certain defects and objections, viz., the cost of operation, the constant attention needed to the pumps and the frequent renewals of packing in said pumps. The invention consists of a table, supporting legs therefor, a plurality of radially movable compressible jaws mounted on the table. rings surrounding the jaws and carrying cam elements. rollers carried by the jaws and co-operating with the cam elements, springs for unging the gears outwardly and maintaining the rollers against the cams, and a gear for rotating the cam rings to force the jaws inwardly and clamp the tire.

Robert Vaughn, Corvallis, Oregon, inventor; Samuel S. Ewing and Enoch A. Cone, assignees of one-fourth interest, same place. Cross-cut Saw Handle. - The object of this invention is to provide an efficient means for securely connecting a cross-cut saw handle with the blade of the saw, so as to permit an independent adjustment of either part without loosening or otherwise affecting the other part. It consists of a continuous screw having an intermediate threaded portion and provided with an inner blade receiving terminal and an outer handle receiving portion, a blade guard monnted on the inner portion of the screw, an inner handle engaging plate arranged on the outer portion of the screw, and independently operable nuts mounted on the threaded portion of the screw for engaging the blade guard and handle plate and forcing these parts against the saw blade and handle respectively.

Oliver W. Robins, Cedar Rapids, Iowa. Two patents.—The invention of the first patent has for its object to provide a simple and comparatively inexpensive snow scraper, designed for use in ice fields for cleaning ice previous to harvesting the same, so as to effectively scrape the snow from the surface of the ice. The snow scraper comprises a pivotally mounted body, adapted to be tilted forwardly when scraping the snow from the ice, and capable of being arranged in a horizontal position for carrying a load of snow, and adapted to be tilted rearwardly for dumping the load. The scraper has means for automatically raising the end gate of the body when the latter is tilted rearwardly for dropping the load.

The invention of the second patent has for its object to provide an ice edger, particularly designed for handling ice in ice houses, and it includes a platform adapted to receive cakes of ice from a feeding ice run, an adjustable ice run extending from the platform, and means in the form of levers adjustable along the ice run for discharging the ice laterally from the ice run at different points along the same, and for simultaneously changing the position of the cakes of

ice from flat to edgewise.



Advertisements inserted in this column for 10 cents a line (about 7 words) each insertion. Every new subscriber sending \$1.00 to The Inventive Age will be entitled to the Age one year and to five lines three times FREE. Additional lines or insertions at regular rates.

FOR SALE-Several good patents. Direct from owners. No commission. Address, Advertisers Co-operative Association, Chicago, Ill. jy

For Sale — Patent No. 887.552. Improved Tongs. Two ways of using them. Can be made to hold large or small articles. Address, James Veno, Vancouver, B. C., Canada. oct

FOR SALE outright or on royalty—Patent on sanitary case for comfortables. Splendid device. Unlimited demand. Address, A. C. Caldwell, No. 633 14th St. Oakland, Cal.

FOR SALE-Patent No. 976,737, dated Nov. 22, 1910. Well Packer. Designed to pack bottom and top of gas strata to prevent water from rising in bottom of gas or oil well. Address, William Hemme, Altoona, Kausas.

POR SALE—Patent No. 988,413, for Non-Refillable Bottle. Address, James Veno, General Delivery, Vancouver, B. C., Canada. jy

FOR SALE outright or on royalty — Patent No. 982,568, dated Jan. 24, 1911. Automatic Mail Bag Catcher and Delivering Device. Exchanges mails from fast trains. Will accept best offer. royalty or cash. Correspondence solicited. Address, Charles E. Boone, Elk Creek, Neb.

FOR SALE-U. S. Patent No. 981,540. A rotary engine. The best ever made. For terms of sale apply to M. A. Dooley, Cary Station, Ill. jy

FOR SALE-A wonder at last. An extension single and double iron bedstead, also folding springs and extension slats. Patent No. 985,355. Will sell reasonably. For particulars address, S. R. Lockhart, Buna, Texas.

For Sale—Patent No. 980,238. For outright sale. Little Daisy Fan Attachment for Dental Engine. It is so simple in construction that it was in operation less than one hour, after first thought of. It is perfect and has no competitor. Address, Dr. J. S. Frisbie, D. D. S., Rotan, Texas. jy

FOR SALE or lease—U. S. Patent No. 971,517, recently granted. Fluid Motor, Very valuable device comprising valve-gear to be used with all kinds of motive fluids. Dead center absolutely avoided. No fly-wheel needed. Simplicity of construction with other advantages. For particulars address. Carlos F. Benitez, 141 Ocampo St. Guadalajara, Mexico.

For Sale—Patent No. 974,787. Drawers designed for athletes, soldiers and others who ride horseback or bicycles. Address, Hannah Goldsby, Wauchula, Florida.

POR SALE - Patent No. 981,052, Manure Loader; Patent No. 976,250, Walking Rake. Will sell reasonably. Investigate for your self and make me an offer. Address W. F. Bohling, Arcadia, Iowa.

FOR SALE—Patent No. 975,553. Anti-slipping attachment for horse shoes; applicable to any shoe. Address. James May. P. O. Box 61, Mineola, L. I. New York.

FOR SALE-U. S. Patent No. 976,289, dated Nov. 22, 1910. Lamp burner with two narrow wicks, in place of one wide wick, which does away with any high side to flame, Will accept best offer, royalty or cash. Address, A. M. Porter, Amsterdam, Mo.

FOR SALE—Would like to sell outright or on royalty Patent No. 675,336. A guard for receptacles for whipping cream. Investors interested in the same. please address, Norah M. Doherty, Pleasant View Farm, Vernon Centre, Connecticut, jun

FOR SALE—Patent for Changeable Gear for Bicycles. High, low and intermediate gear immediately available to the rider without dismounting. The variations are controlled by foot. The only real improvement in bicycles for years. Simple and inexpensive. Prospective purchasers, address, J. M. Fleming, Pensacola, Florida.

FOR SALE — Canadian Patent No. 125,147. Wanted parties in Canada to manufacture my combined two part pad-locking whip socket; also in U. S. royalty or cash. Address, Severin Lilland, Jewell Junction, Iowa. jun

FOR SALE—Patent No. 969,081. Drill sharpener for hand steel for mines and prospectors. Very simple, and can be manufactured at small cost. Write for terms. Address, R. A. Schmidt, Bayard Station, New Mexico.

FOR SALE-U. S. Patent No. 892.193, dated Jan. 30, 1908, Automatic cut off for natural gas to prevent explosions. Excellent proposition. Write for particulars to, J. H. Stanton, St. Catharines, Ont., Canada.

FOR SALE—Patent No. 945,812, dated Jan. 11, 1910. Cheapest, simplest and most efficient hand-operated sanitary cow-milking machine. Good proposition, for sale or on royalty. Address, R. D. Roth, Gettysburg, Pa. my

For Sale—U. S. Patent No. 972,371. A new and very unique card game. Scientific, educational and fascinating; 48 cards; three color patriotic illustrations and rules; all in neat gold lettered cases. Sample 50 cents, post paid. Address, W. A. Hammett, Corsicana, Texas.

For Sale - Patent No. 547,581. Windrow Baling Press. A great labor and hay saver. Simple yet powerful. Address, Jacob Barens, Altus, Ark.

FOR SALE - U. S. Patent No. 947,865, and Canadian Patent No. 127,371, on a Door Catch. Either outright or on roy alty. Address, William D. Taubert, care Alfred Nuffer, Hills. my

F or Sale-Patent No. 959,481, dated May 31, 1910. Automatic Rivet on Scissors. Cuts clean, saves worry and time for women. Part cash and royalty. Address, John W. Dowden, Box 122, Reeves, La.

HORSALE-U. S. Patent No. 967,746, Sash Holder. Will sell outright or on royalty basis. For particulars, address Frank E. Erickson, Marquam, Oregon.

F or Sale-Patent No. 965.429, dated July 26, 1910. Steel Rail Joint. Address, William Arndt, 711 South Eleventh Street, Gosben. Indiana.

POR SALE—Two patents in U.S. and Canada. Patent No. 965,411, Combination Cultivator and Furrow Maker. Patent No. 971,218, Rotary Harrow. Based on entirely new and original idea. Will sell outright or on royalty. No reasonable offer refused. Address, Sigmund Schaller, Box 63, Haddam, Conn. my

FOR SALE-U, S. Patent No. 974,411; Canadian Patent No. 129,289. Combination Rail Brace and Nut Lock. Prevents low joints, rails spreading, rails turning laterally. All nuts locked against turning movements, avoiding expense of track walkers. Can be used at either joints or intermediate points to best advantage, thus avoiding serious wrecks. The best combination brace yet invented. Will consider any reasonable offer. either outright or royalty and part cash. Address, C. Maunders, Jackson, Minn.

WANTED.

WANTED a Company in the U. S. to manufacture my saw-fitting device, patent No. 972,789, dated Oct, 10, 1910. Also a company in Canada to manufacture same device, Canadian Patent No. 124,345, dated March 8, 1910. I will sell either or both of said patents. Address, C. R. Pierce, Rainier, Washington.

Wanted-Agency propositions. What have you to sell? Address, Ernest Morse, Luverne, Minn.

WANTED—Two or three persons with some capital to correspond with a patent owner of a new meritorious article. Practice on model very satisfactory. Will not sell patent but will join in company. Address, F. D. F. Box 28, Waterbury, Conn.

WANTED-Not for sale but want a company to manufacture my manure loader on royalty, Patent No. 918,695. Address, Lars C. Peterson, Osage City, Kansas.

WANTED—Partners for foreign patents on whip socket lock, for share in patents. U. S. patent allowed. Key remains in lock when whip is loose. One-half turn of key locks whip, When whip is locked key is removed. The harder the pull the tighter the grip. For particulars address, Clarence S. Skinner, Payne, Ohio. jun

W ANTED—Four (4) men to loan me \$100 each, for four years, at 6 per cent to help me to push four (4) good paying toy inventions, for which I will return to each of them their loan, and I will give also to each loaner 10 per cent of all the income from sale of said patent inventions in whatever way I may dispose of said patents. Here is your chance. Who will accept, Address, E. W. Barton, No. 35 Carroll St., Binghamton, N, Y, my

WANTED—A company to manufacture a bag holder made of sheet iron. U.S. Patent No, 968,349, dated August 23, 1910. Will have patent for Canada in a short time. Address, Louis Hanson, Cottonwood, Idaho. my

Electrical Review and Western Electrician

Published weekly from the center of the industry, this publication is in the best possible geographical position to gather and present the most important and interesting news of the entire electrical industry.

SUBSCRIPTION PRICE

U. S. \$3.00 per year, Canada \$4,00 per year, Foreign Countries \$6.00 per year. Sample Copy Free

It is seen and read by practically every buyer of electrical material in this country and abroad. Advertising rates on application.

ELECTRICAL REVIEW PUBLISHING CO., 507 Marquette Bldg., CHICAGO.

A NEW BOOK FOR INVENTORS Patents and How to Make Money out of Them,

By W. B. Hurchinson.

This is the only book published, giving a detailed and full account, from the author's actual experience, of just what steps are necessary from the time the invention is conceived, to the time it is sold, with a clear and concise resume of the law and practice, legally and commercially, of trade-marks and copyrights. It also tells accurately How and What to invent. How to sell Inventions, Place them on the Market, Interest Capital in them, and to successfully Promote a Stock Company. It also contains an index of forms worth double the price of the book to any one interested.

ELEGANTLY CLOTH BOUND.

GOLD STAMPED. \$1.00 Postpaid.

Sent with one subscription to AGE for \$1.50. Or will sell separately.

Address— The Inventive Age Pub. Co., 918 F St., N. W. WASHINGTON, D. C.



A VALUABLE OFFER TO INVENTORS.

A Complete Outfit of Printed Matter for \$20.

- 1. A zinc etching of your invention for use in printing letterheads, envelopes, circulars, etc.
 - 2. One thousand printed circulars.
- 3. Five hundred envelopes with your name and address printed in the corner.
- 4. Five hundred letterheads with a cut of your invention, and your name and address neatly printed thereon.
- 5. A list of manufacturers in the special line of your invention.
- 6. A form letter to be followed in conducting your correspondence with manufacturers and others.
- 7. Four dozen deeds useful in selling state, county, town or shoprights.

 Address:—

INVENTIVE AGE PUBLISHING CO. Dept. O. WASHINGTON, D. C.

ATTENTION INVENTORS!

LISTS OF MANUFACTURERS FURNISHED.

We have increased our facilities for furnishing lists of manufacturers, and now cover every line of industry. The names are obtained from well known directories.

Our charge for each list is one dollar.

In ordering, please state specifically the class of manufacturers desired. Address: Inventive Age Pub. Co., Dept. M. 918 F. St., Washington, D. C.

Every subscriber when sending \$1.00 is entitled to a free advertisement, not exceeding five lines, of any patent in which he may be interested. The ad. will be inserted three times.

THE INVENTIVE AGE PUBLISHING CO., Washington, D. C.
I herewith enclose \$1.00 for one year's subscription to
"THE INVENTIVE AGE."
I also enclose ad. for insertion in the (Patents for Sale*) (Want*) column of your paper.
NAME
P. O

*Please indicate in which column you want the ad. inserted.

N. B.—Remit in the way most convenient.

STATE.....

37 Inventive age

Established 1889.

Published mouthly by

THE INVENTIVE AGE PUBLISHING CO.,

National Union Building, 918 F Street, N. W., Washington, D. C.

THE INVENTIVE AGE is sent. postage prepaid, to any address in the United States, Canada, Mexico, Hawaii, and Porto Rico, for ONE DOLLAR to any other country, postage prepaid, ONE DOLLAR AND TWENTY-FIVE CENTS

Correspondence with inventors, mechanics, patand manufacturers, is columns of this journal are open for the discussion of such subjects as are of general interest to its

Technical matter is particularly desired. We want practical information from practical men.

THE INVENTIVE AGE is independent.

Special facilities for furnishing cuts of any ented device together with descriptive article. Business specials 10 cents a line each insertion: 7 words to the line. No advertisement less than 25

Address all communications to

THE INVENTIVE AGE PUBLISHING COMPANY, WASHINGTON, D. C.

Entered at the Post-office as 2nd class matter.

WASHINGTON, D. C., MAY 1, 1911.

Making Patented Articles for One's Own Use.

It has been frequently commented upon that a lie often repeated takes on the semblance of truth, and so it may be stated of erroneous ideas which creep into the minds of the public. It seems hard to eradicate them. One generation after another adopts an error, and no matter how often it is exploded in the papers, there is always a number of people who never get the matter right.

Every patent attorney has had to answer repeatedly the question as to whether or not a person has a right to make for his own use, without sale, any article that is patented. If the questioner were to stop a moment and consider the true import of the inquiry, it is thought, in many instances, he would see for himself that this could not be true, for what value would the patent possess to the patentee, if every member of the public could, during the life of the patent, make for his own use a single specimen of the patented article?

Take, for instance, a patent on a toy: suppose that every head of a house could make for the use of his children a single sample of that toy. Where would the market come in for the patentee? He could make the tovs himself and offer them for sale, but there would be no purchasers for the patented article.

Suppose the patent relates to a car coupling. If any man can make for his own use any patented article, then every railroad can make for its own use samples of the car coupling.

Suppose the invention relates to a machine for making chains, any manufacturer of chains could make for his own use a sample of the patented machine. To us the question has always appeared a ridiculous one. It shows utter lack of thought. It indicates an absolute lack of consideration of the obvious.

Walker on Patents is an authority, and he treats this subject in the following way:-

"A patentee has two kinds of rights in his invention. He has a right to make, use and sell specimens of the invented thing; and he has a right to prevent all other persons from doing either of those acts. A patent right is an absolute and not a qualified right. During the term of his patent a patentee may, if he pleases, decline to allow any other person to make, use or sell the invention which it covers, and at the same time may refrain from making, using and selling his invention himself."

In other words, a patent is the only monopoly which does not conflict with the Sherman Anti-Trust Law. It is the only monopoly which Congress has never tried to legislate against, and it is believed that any legislation which would deprive an inventor of his monopoly would be in conflict with the constitution.

The rights secured to a patentee are three fold; the exclusive right to manufacture the invention, the exclusive right to sell the invention, and the exclusive right to use the invention. A patentee may license a manufacturer to make his invention and retain to himself the right to sell and use it. He may license one manufacturer to make the invention, another concern to sell it, and still another concern to use it. Indeed, he may go so far as to impose conditions on the use of the manufactured article after it is sold, and such conditions have been upheld in the courts.

Having, therefore, the exclusive right to make the patented article, the patentee can prevent any one from manufacturing a single specimen of the thing covered by the patent, whether that single specimen is made for personal use or for sale it matters not. The patentee can sue the maker of the article and enjoin its use, and collect damages or profits for the invasion of his exclusive right to make the patented device.

The patentee can sue the person who sells an article which infringes his patent. Thus the jobber, the wholesale dealer, or the retail dealer may be separately sued for infringement of a patent, where the article supplied to the jobber, the wholesale dealer or the retail dealer was furnished by an infringing manufacturer. The continued sale of the infringing article could be enjoined and damages or profits collected from the jobber, or the wholesale dealer or the retail

The patentee can, also, sue any one who uses the infringing article, as, for instance, the farmer who purchases from a hardware dealer a wire stretcher, which is an infringement on the rights of the patentee. The farmer can be enjoined from making use of the infringing wire stretcher, and the damages or profits may be recovered from the farmer if the article is made

It may be stated in this connection, though, that courts do not favor suits

against the user only. They are disposed to require that the patentee proceed against the manufacturer, or the party really responsible for the initiation of the infringement. Technically though, and as a matter of right, the patentee can sue all three parties under the law.

We suppose the time will never arrive when a certain number of people will not entertain the erroneous view that a man may make for his own use any article, whether patented or not, and we fancy that a decade hence, men will be propounding this question, just as it is being propounded by men now who are seemingly intelligent and ought to know better.

The Non-refillable Bottle Fake.

If the history of a search for a bottle that cannot be refilled should ever be written, it would be found to be as costly and as fruitless as the search for perpetual motion or the elixir of life. Yet there are attorneys who mislead the public with "Lists of Inventions Wanted," and who give a prominent place among such lists to "a non-refillable bottle!"

It is curious how newspapers can create an artificial demand for an invention and stimulate applications for patents along certain lines. Some years ago, in 1896 to be exact, a telegrapher out at Sleepy Eye, Minn., telegraphed that a party by the name of Grant Bramble of Sleepy Eye, Minn., had been offered and accepted several million dollars for a patent on a rotary steam engine. This was followed up later by pictures of Grant Bramble and his cabin, a picture of his engine, and what was more to the point, a lithographed representation of the check which he was supposed to have received. One paper after another took it up. It spread like wildfire. Copies of Grant Bramble's patent at the Patent Office,—and he really had one,—were soon exhausted; they could not be procured, and it was not long before other inventors thought that if Grant Bramble could make several million dollars on a rotary engine, they would try their hands at inventing a rotary engine. The usual result followed, and the Patent Office was for a time flooded with applications for patent on rotary steam engines. The pressure on Grant Bramble to locate the several million dollars become so strong, and men with investment schemes in which to induce the lucky inventor to invest his windfall, became so persistent, that finally Grant Bramble had to admit that it was all a fake, and that the only true thing about it was that he obtained a patent for it. Instead of receiving several million dollars for his patent, he had received nothing. He sought and obtained notoriety and that was all. His patent remained unsold. The non-refillable bottle scheme

started in a somewhat different manner. A manufacturer of whiskey, residing at Lexington, Ky., gave notice through the newspapers that he would pay \$20,000 for a device, which

would prevent refilling of the bottles containing the whiskey that he made and sold. He claimed that saloon keepers as well as others, would take the bottles containing his labels and refill them with cheaper whiskey, and that his brand of whiskey was discredited, and all the money he spent in advertising his whiskey went for naught. One paper after another spread the news, and it was not long before the Patent Office felt the effect of the publicity given to this advertising scheme. Whether the Kentucky manufacturer was really honest in his desire for a non-refillable bottle, no one can tell. We understand that he is now dead.

We have in mind another concern, located at Pittsburg, Pa., which adopted the same scheme, simply for the purpose of advertising its brand of whiskey. We know of an inventor, who took out four patents on various improvements in non-refillable bottles, and spent over a year of his life in working on the subject, and considerable money belonging to himself and others who interested themselves in his project, only to find after he had perfected his plans and devised a bottle,-which was in fact a non-refillable bottle—that there was really no request for an article of this kind, and that it was purely an artificial demand stimulated by the desire of certain manufacturers of whiskey to advertise their goods. After the inventor had got his bottle in shape for the market, he approached the secretary of the Pittsburg concern, which was advertising for a nonrefillable bottle, and learned to his amazement that they really did not want an non-refillable bottle, that they would not have any use for it if it was offered to them; that it was purely an advertising scheme, and that they kept up the advertising for a non-refillable bottle simply to make their whiskey known; for the public naturally concluded from their demand for a non-refillable bottle that their whiskey must be a superior product, since they were willing to pay so many thousand dollars (on paper) for such a bottle. In other words, this Pittsburg concern was willing to get all the people in the country worked up on the subject of a non-refillable bottle, simply and solely that the public might believe that their whiskey was so good, so pure and so superior to every other brand of whiskey, that they were willing to spend many thousands of dollars to preserve its purity and excellence.

The non-refillable bottle craze is kept alive solely by the efforts of whiskey concerns to boost their own property. Of course, inventors do had invented a rotary engine and had not know this. They read the "Lists of Inventions Wanted" in the books of certain patent attorneys, and they see in the papers that a certain whiskey concern is willing to spend \$20,000 or \$50,000 for a non-refillable bottle and they work their heads off trying to devise one. After spending vears of time and perhaps impoverishing themselves and others in getting their inventions to a state of perfection, they learn that they have been chasing a "will-'o.the-wisp,"

that their work was useless, and that there is no such demand for a nonrefillable bottle as the public has been led to believe exists.

The newspapers' are ready to take up a canard and to spread sensational facts, but they are indifferent about correcting the error. The public should be advised, just as widely as they were misinformed, that there is no demand for a non-refillable bottle and that work along this line is love's labor lost.

An article on this subject would be incomplete without stating the results of this wide-spread publicity. An examination of the records of the Patent Office shows that there have been 1,650 patents granted on non-refillable bottles. So varied are the inventions in construction that there are eighteen sub-classes, the patents being divided up by the Patent Office to accord with certain differences in construction in order to facilitate examination. About two patents on non-refillable bottles are now being issued every week. Some of the patents are assigned to companies, which have been formed to promote the same. If one had the time to investigate the matter. he would find that the misdirected energy and money, which have been wasted on this project alone, would have been sufficient to have established almost as many libraries as Carnegie has created. What a monument to error and to wasted effort!

Conditions in the Patent Office.

The report of the Commissioner of Patents for the last year, laid before the last Congress, contains some figures that present interesting comparisons with those of the British Patent Office for the like period. There will be found in another column a review of the last annual statement of the British Comptroller General of Patents, Trademarks and Designs, (an office which corresponds to that of Commissioner of Patents) from which it appears that the total number of patent applications filed in the British Office last year was 39,873, while the figures for the United States exceeded 64,000. We have always claimed to be the most inventive nation on earth, but considering the difference in the population of the two countries, the excess in our favor is not remarkable. It should further be noted that not all of the applications for patent made to our Office are granted, as many an inventor knows to his sorrow. The number of United States patents issued during the period under review was only 35,807. In Great Britain, on the other hand. an application for patent is usually granted.

England seems to do a thriving thirty thousand were applied for during the year, against only 1,155 in this country. The returns for trademarks show a like preponderance in favor of British industry, the comparative figures being 10,623, and 6,843. The total receipts of our Office were \$2,025,536, and the expenditures \$2,005,712, leaving a surplus of nearly \$20,000. There is always a surplus to the credit of the Office at the close of

each year, the total now amounting to nearly \$7,000,000. The Commissioner recommends in his reports, with clockwork regularity, that this sum be utilized for providing a new building for the Patent Office—a building which will possess suitable facilities for expediting the work, now hampered in many ways by the lack of room. The present structure is old, enormously overcrowded, and so arranged that the business cannot be properly and promptly transacted. It is to be hoped that Congress will soon heed this recommendation, and appropriate the money which has been earned by the Patent Office to erect a building in which its interests can be cared for. Great Britain has been much more generous in this respect than our government, as it has recently built a new and commodious office. It may be noted that although inventors often fail to make money out of patents, the governments that issue them find the business lucrative. There may be deficits in the Postoffice and in other Departments, but never in the Bureau which has charge of patents. The same is true of Great Britain. where the profits last year are reported as half a million dollars.

There are other things besides a new home that our Patent Office needs. The work of classifying the patents is of great importance, and although this has now been begun, the necessity is so urgent that we uphold the recommendation, in the Commissioner's report, that the force be enlarged in order that it may be completed. So large is the business of the Office that it is almost impossible for the examiners to make the proper searches during the investigation of the patentability of an application. Much more difficult is it for the attorneys, who have not access to the records as the examiners have, to decide these questions. The present arrangement is most unsatisfactory, and compares unfavorably with the organized methods in vogue in other countries. On this topic the report says:

"The great volume of American patents already issued, numbering nearly one million, and also between two and three millions of foreign patents and about 50,000 volumes of scientific and technical works in the library of this Burcau, should be classified and digested as soon as possible. When this subject was brought to the attention of the Committee on Appropriations of the House and Senate, I am pleased to state that it was received with much interest and favorably discussed. The Office was given an examiner of classifications on an increased salary, and there was also provided a force of twenty assistant examiners for this special work. business in design patents. Over The classification of the United States patents is now being made, and at the present time about half of these patents have been classified. In my opinion it would be in the interest of great economy if this force were doubled, so that this very important work could be completed at the earliest possible date. No classification in this Office has been made since its foundation, or since the first patent was issued in 1790.

"The business of the Office is so enormous at the present time that it is almost impossible for the examining force to work with any great degree of certainty in making searches during the examination of applications for patents. It will also give enormous benefit to the inventors and manufacturers of the country and to the outside public generally to have this great mass of material in as perfect form for use as it is possible to make it. With this work carefully done it would not be necessary for the Commissioner of Patents to ask for an increase of force every year, as the work of examination of the applications of inventors would be very much simplified, and such patents as are granted would have a much greater degree of validity attached to them than is possible without these facilities for thorough search."

The International Congress of the Union for the Protection of Industrial Property meets in Washington this month. The nations of the world, those who are adherents to the treaty of Paris of 1883—which treaty covered the issue of patents and similar forms of industrial protection—as well as all others, have been invited by the United States to hold their congress in this city. It was originally intended to have the assembly in the spring of last year, but it was learned that there would not be sufficient time for the nations participating - which number some 35 in all—to prepare material to be considered by the conference, and the date was changed to May, 1911. Congress made an appropriation of ten thousand dollars to defray the expenses of this gathering. Following the line of recent efforts to promote amity and good feeling among the states of North and South America, our government has especially invited the twenty Pan American countries to send representatives to this gathering. Discussing this matter, the report says:

"This congress will be composed of members representing the various foreign nations, whose credentials will empower them to sign measure that shall be passed by said congress, subject, however, to the subsequent approval of their respective governments. The meeting of this congress will probably be the most important in the history of the union. Able and experienced delegates, mostly officials of the various nations, will be appointed, who will discuss and act upon measures to bring about international concessions and agreements in patent and trademark laws, thereby harmonizing the laws of various countries, which laws are at the present time widely at variance. so much so, in fact, that it is almost impossible for inventors and manufacturers to do business with any degree of satisfaction in the various countries."

An effort to reach some common basis for the regulation of these matters has been made through treaties. An agreement was recently made with Germany, but it is reported that it is not satisfactory to German manufacturers, and that there is danger it will be abrogated. Treaties

with other countries are being discussed. It is hoped that the congress will take steps to unify the laws on the subject.

Speaking of other conditions in the Patent Office, the report says:

"The conditions surrounding the registration of trademarks are not satisfactory. The trademark branch of the Office is quite distinctive from the regular technical work and has no special relation to the rest of the work of the Office. However, that branch of the Office has been kept up with great effort on the part of the present administration, although it has been found necessary to ask Congress through the appropriation bills to provide a force of assistant examiners of trademarks and designs. When these are provided, it will be possible to put this branch of the work on the same high footing now attained by the regular examining corps.

"In this connection, permit me to say that I think it quite necessary. in view of the great importance trademarks are to manufacturers and to commerce generally, that this part of the work should be more carefully done. and by trained men. The subject of trademarks has received a great deal of attention in this as well as foreign countries in the last year or two, and it will soon be the subject of discussion at the forthcoming Congress of the Union for the Protection of Industrial Property, which convenes in Washington this month. I am very clearly of the opinion that after the conference referred to has met and considered the question of trademarks from an international standpoint, it will be quite necessary to pass a new trademark law. This law should be, in my opinion, very liberal and unmistakable as to its provisions.

Multiplex Telephone.

The greatest step made in electrical communication since the invention of the Bell telephone, is the recent discovery by an officer of the Signal Corps of a method of sending many telephone messages over a single wire, all at the same time and without the slightest interference. The principle of the invention is the application of the methods of wireless telegraphy to the existing telephone apparatus. By employing an electrical current which changes many thousands of times in direction every second, electric waves are created in the surrounding ether, and are guided through to their destination by—but not in—the wire. so that the system may be described as wireless telephony guided by a single wire. The number of direction changes of the current per second is called the frequency of the circuit. It has been found that many currents of varying frequencies may be sent over the same wire without interfering with each other. At the destination these currents are picked off by detectors. like those employed in wireless telegraphy, and each of these detectors is absolutely unaffected by any other current than the one tuned to the frequency of the current it is intended to pick up.

It is said that telegraph messages, transmitted with the usual key and received in the usual sounder, may alse be sent simultaneously over the same line, using the same method of selection as with the telephone messages. The possibilities of the inven-

tion seem almost limitless.

A

CLASSIFIED list of Patents issued during the month appears in each issue of the INVENTIVE AGE. This keeps inventors and manufacturers posted in the art in which they are most interested.—We will send, postpaid, to any address, printed copies of any U. S. patent, with specifications and drawings, upon receipt of 10 cents per copy.—Please give correct data in ordering.—Address.

THE INVENTIVE AGE PUBLISHING CO., 918 F St., N. W., Washington, D. C.

LIST OF PATENTS

--:0:---

Issued February 21,1911.

MECHANICAL PATENTS.

Acid and electrolytic iron, Making sulfuric, Acid and electrolytic iron, Making sulfuric,
A. S. Raouage
Airships, Propeller wheel for J. W. Hearst
Airships, Storage-battery attachment for.
J. W. Hearst
Ammonia-absorber. S. S. Wyly
Attrition-mill plate. B. W. Harris
Automatic coupling. I'. II. Shailer
Antomatic switch. J. B. Schug
Automobile-wheel. L. Conrad
Axle-bearing for vehicles, Spring.
J. E. Simmons
Axle-Inbrieator. J. N. Riekards
Bag filling and weighing machine, Automatic. E. L. Buschman Bag ninng and weighing machine, Automatic. E. L. Buschman Baling-press. A. H. Symons Barometer. W. Schocke Barrels or crates, Machine for making knockdown. E. W. Robinson Barrette. D. H. Butler Bath-cabizet. S. Ballard Bath-cabiret......S. Baflard
Bath-mat, Foldable...B. D. Knickerbocker
Batteries, Separator for secondary storage.
A. F. Madden
Bed bottom
B. Regman A. F. Madden
Red-bottom. R. Rerman
Bed, Couch (5 pats.). C. L. Plunkett
Bed frame, Invalid. J. A. Bartholome
Bedstead, Sheet-metal. C. A. Linden
Beet-topper. F. Briggs
Relt-pin, garment-retainer, corset-protector,
and waist-former, Combined.
F. M. Kearns
Relt, Reversible E. Kuhn
Beiler fire-box, LocomotiveBeiler fire-box, LocomotiveBoiler fire-box, LocomotiveBoiler-flac-cleaner system. D. E. Hibner
Boiler-gage attachment. C. A. Johnson
Roller-tube cleaner. T. S. Waller et al.
Roring-machine drill-holder or chuck with Roiler-tube cleaner. T. S. Waller et al.
Roring-machine. W. Beehler
Boring-machine drill-holder or chuck with
self-centering device. P. G. Blomberg
Bottle and jar cap. H. P. Young
Bottle attachment. C. V. Gear
Bottle-capping machine. F. W. Dafoe
Bottle-capping machine. Fluid-pressure-opcrated. R. V. Cragss
Bottle-holder. J. T. Nolan
Bottle, Non-refillable. W. E. Barnard
Bottle, Non-refillable. S. W. Phelps
Rottle, Non-refillable. J. B. Chartrand
Bottle-stopper. H. C. Braun
Bottle tube, Non-breakable siphon...
O. L. Koseherak
Box-covering machine. C. B. Baldwin
Bracket. W. G. Venard
Brake-beam. C. E. Raner et al.

Concrete construction, System of . P. Aylett
Concrete or cement fence...T. II. Stauley
Concrete piles, columns, or the like, Machine for making reinforced-......
A. C. Chenoweth
Concrete railway-tic......W. II. Haslet
Concrete reinforcement....C. J. Mogan
Concrete silos, Mold for forming......
C. A. Anderson
Concrete walks, floors, curbs, gutters, etc.,
Form for the construction of. Cooling apparatus. T. H. Harris et al.
Coop. M. J. Stokes
Corn-hanger. R. W. Allsup
Corn-sheller feeding mechanism (reissue).
W. J. and L. F. Dauner
Corrugator. R. N. Lyons
Corset-clasp. M. B. Garduer
Cotton eleaner and separator.
T. E. Johnston
Cotton from its seed, Apparatus for separating. A. G. Myers
Couch, Box- J. Luppino
Couch, Extensible F. M. Tinkham
Cench or divan J. Luppino
Couch, Wardrobe- J. Luppino
Cover-closure for sheet-metal vessels.
C. Stollberg Cycles and other vehicles, Spring-fork for Damper, Draft-regulating. W. B. Fowler
Davenport. J. Lappino
Decorative leaf. J. V. C. Webber 1997 Davemort. J. Lappino
Decorative leaf. J. A. C. Fichtmueller
Dental impression-cup. I. A. Buruett
Derrick. G. Frink Dental impression-cup.

Derrick. G. Frink
Designator, recorder, and register.

E. J. Brandt
Detergent. E. E. Johnson
Diaphragm construction. W. S. Heltzen
Disinfecting-closet, Automatic. N. Ogden
Disinfection of closet-seats, Apparaus for.

W. Baginsky
Dispensing device. C. Nemethi
Disulay-fixture (2 pats). J. T. Clark Dispensing device.....C. Nemetrn Display-fixture (2 pats)...J. T. Clark Distilling shale and other bituminous substances, Apparatus for ...J. Noad Door-holt...F. J. Moran Door-check...L. P. Spangler Door, Grain...J. Henry Dough mixer and kneader. O. D. Woodruff Dough mixer and kneader. O. D. Woodruff
Dough-molding machine.

R. J. F. and A. E. Aldred
Draw-plate. A. Rarashick
Drill (2 pats.). A. C. Ludhun
Drill-casings, Pulling-cap for A. C. Ludhun
Drill-rod handle. A. C. Ludhun
Drill-rod handle. L. V. Rathbun
Drink-mixing machine. H. G. Lilienthal
Drip-cup. L. V. Rathbun
Driving apparatus, Portable.

R. R. Matthews
Dumb-bell, Adjustable. H. W. Titus
Dyestuff and making same, Monoazo.

H. Geldermann
Eaves-trongh support. W. C. Swisher
Edge setter and finisher. E. N. Chandler
Electric apparatus, Vapor.

M. von Recklinghausen
Electric-light fixture. P. Burger Electric furnace...E. Wassmer
Electric-light fixture...P. Burger
Electric-light switch, Multiple...
G. D. Brookins et al.
Electrodeposition, Producing articles by... Electrodeposition, Producing articles by...

Electromagnetic waves, Apparatus for receiving. F. A. Hart Elevating apparatus. A. Ray Elevator-heads, Rack-stop for...

Embroidering-machine shuttles, Filling-machine for. A. Blum Engine cooler, Internal-combustion-...

C. L. Van Schoick Engine-indicator. M. Arndt Engine safety device, Steam-W. B. Kollar Engine-starting mechanism, Explosion-...

R. J. Northam et al. Engines, Ignition-timer for internal-combustion. L. B. Holt et al. Envelop, Pay-... J. Regenstein Equalizer. E. C. Plomberg Evaporating apparatus. F. H. Eijdman

Evaporating solutions......S. M. Lillie Fabrie holder and exhibitor...F. A. Ruabe Fabric, Method and apparatus for handling coated reinforeing (reissue)...A. Thoma Fan.....J. Henz Farm-gate...E. Gilbert Feed-regulator and speed-indicator. Alarm.

A. Savage
Feed-trough and rack, Combined.

S. J. MeGinnis
Feed-trough, Animal.

Feeder, BoilerFeeding and cutting mechanism. O. Briede
Fertilizers, Electrochemical production of
phosphatic.

G. Levi
Fiber-cleaning machine.

M. G. McLane
Filter, Automatic household- (2 pats.).

J. Rarick
Filtering and heating device, Combined.

O. F. Gambati
Fire-door.

T. E. Collins
Fire-extinguisher valve, Automatic.

A. Blauvelt Feed-regulator and speed-indicator. Alarm. Folding chair. S. G. Krile Folding table. J. W. Bereman Food product and preparing the same, Cranberry. E. W. Cooke Footwear. E. Roberts Forging-machine. C. E. Roed Forming-machine. A. C. Livermore Fuel-feeding apparatus, Fine-. G. L. Swift Furnace. J. Harrington Furnace for metallurgical purposes. W. Rodenhauser Furs, Treating. A. S. Landau Fuse for ordnance-shells. I. T. von Risch Fuse, Rechargeable safety.

H. Wallace et al. Game apparatus. G. Hitzroth Game apparatus. G. Hitzroth Gas-curiching apparatus. E. A. Dieterle Gas-holder. O. H. Wenderoth Gas-liquefying apparatus. A. C. Wood Gas-producer feeding mechanism. G. H. Isley Gear, Radial-draft. H. T. Krakau Gearing, Transmission. C. O. Young Glass from smelting-furnaces, Device for extracting measured quantities of. ... H. Severin Glass-holder. P. M. Welsh Grain-cleaner. J. Beall Grain-shocker. H. M. Friesen et al. Grate, Separating. N. Colgen Grain-cleaner. J. Beall
Grain-shocker. H. M. Friesen et al.
Grate, Separating- N. Colgen
Greenhonse-bench J. H. Pladeck
Grinder, Sample- A. J. McCone et al.
Grinding-wheel H. P. Nichols
Grinding-wheels, Producing and operating.
H. R. Nichols Gun-silencer H. Craven
Hammer A. Grant
Hammer, Electric H. F. Whalton
Hammock J. E. Palmer
Hanger-block H. G. Carlson
Harrow L. E. Waterman
Harvester, Beet E. Lang
Harvester, crusher, and huller, Cotton...
O. C. Honghton
Harvesting-machine knotter L. Anderson
Hasp G. W. Aycock
Hat-press J. F. Brennan
Headlight-adjuster C. F. Turner
Heat-insulating wall C. J. Coleman
Heater and filter, Combined O. F. Gambati
Heel-support J. La Croix
Heel-trimming machines, Counter-guard for

Lamp globes, shades, etc., Auxiliary holder Lock L. A. Maryott
Locomotive-boiler (reissue) J. M. McClellon
Logging sheave-block H. Wilson
Loom picker-stick buffer M. J. Harrigan
Loom-slinttle J. Ruegg
Lubricator O. H. Neiman
Lubricator-cup R. M. Stevenson
Mail-bag closure A. W. Clark
Mail-exchanger, Railway G. Holsopple
Mail-haudling apparatus J. H. Buchanan
Mail-order advertising and coin-return device C. H. Dickinson
Mattress side guard, Spring- (2 pats.) ...
A. J. Kreuzkamp
Measurement register, LumberJ. W. Haley et al.
Meat-binder N. Conrad
Meat-cutter J. J. Heekman
Metal-shearing machine, Rotary D. Lennox
Mctallurgical purposes, Container for
M. F. Wilfong
Milk-can (2 pats.) W. F. Dounell
Mine, Submarine T. J. Hunt et al.
Mixing or tumbling machine S. J. Morgan
Moccasin G. H. Bass
Molder's tool J. Whitehead
Molding-cleaner J. E. Wilson et al.
Motor-control system, Electrie

A. C. Eastwood et al.
Mower, Lawn H. H. Spenard
Mule, Self-acting P. Vindrier
Music-sheets, Machiue for making perforated P. J. Meahl
Necktic, Retainer C. W. T. Davies
Net, Landing C. L. C. W. T. Davies
Net, Landing C. C. W. T. Davies
Net, Landing C. C. W. T. Davies
Net, Landing Carbon dioxid from gaseous
products of combustion. M. Reichel et al.
Nozzle, High-pressure H. H. Gorter Ore-concentrating and placer-machine, Aero Ore-concentrators, Table adjustment for... Orcs, Process of and apparatus for concentrating metalliferous......H. E. Wood Ornamenting device..S. Winterbottom et al. Outlet-box......N. Marshall Overshoe, Calk-bearing.....G. S. Meyer Oxidizing nitrogen of air by means of electric discharges....K. Kaiser

Projecting apparatusE. Schneider	S
Projecting apparatus. E. Schneider Projection apparatus, Relaying	92.92
coagulatableH. L. J. Chavassieu Pull-switchG. W. Goodridge Pulp-beating engineF. J. Marshall	S
Pulverizing-rollerW. II. Worst et al. PumpN. McCarty	2022
Pump, Double-plungerJ. C. Whitmer Pump, OilB. M. W. Hanson et al.	S
Pump, Oil-well	22.22
Push-button C Auth Rail-joint W J Deihl	S
Push-button. C. Auth Rail-joint. W. J. Deihl Rail-joint. W. Jurgens Rail-joint. G. B. Anderson Rail-joint, Insulated B. Wolhaupter Railway, gate	${f T} \\ {f T}$
Railway-gate. J. Flynn Railway-tie. J. A. Brooks Railway-track safety device	Γ
Railway-gate. J. Flynn Railway-tie. J. A. Brooks Railway-track safety device. R. E. Carlton et al. Ramie and other fabrics, water-repellent	Т
and coloring the same, Rendering	$_{ m T}^{ m T}$
Razor, Safety- H. G. Cook Razor, Safety- R. T. Winn Receptacle R. Y. Bradshaw Reel-holder J. P. Weaver Refrigerator W. M. Strothers Refrigerator U. S. Meeks Refrigerator-lining W. H. Whittier Releasing-hook C. D. Rees Ribbon bows and the like, Fastening de- vice for G. E. Tarnow	Т
Refrigerator W. M. Strothers Refrigerator U. S. Meeks	T
Refrigerator-limingW. H. Whittier Releasing-hookC. D. Rees Ribbon bows and the like, Fastening de-	Т Т Т
vice for G. E. Tarnow Rim, Demonstable P. J. McCullough Ring-mold F. P. Greco Rolling-mill for metal tinhes M. Koch Roofing-paper, Waterproof lock-scam for	T T T
Rolling-mill for metal tubesM. Koch Roofing-paper, Waterproof lock-seam for	T
Rotary engine. J. H. Watson Rotary engine. K. and E. Wittig Routing-machine. G. Schrade Rowledk G. Welbre	Т Т Т
Rotary engineK. and E. Wittig Routing-machineG. Schrade Rowleck O. Welbre	T T T
RowlockO. Melbye Rubber or similar material to an impalpable powder, Machine for reducing	T
Rubber sele. C. E. Gardner Rubber sele. R. E. Foster Saddle. J. D. Love	T T T
pable powder, Machine for reducing C. E. Gardner Rubber sele	T T T
Sand-blast apparatus C. W. Ebeling Sash-fastening device W. F. O'Rourke Saw handle, Crosscut	Т
ScareF. P. Dunn	Т
ScaleF. P. Dunn ScoopJ. A. Miller et al. Scraper and drag, CombinedH. S. Wood ScrewH. G. Reiniger	T T
Screw-driver	T T
Seal. Car W. K. Edgar Sectional chest G. P. Tilton	T T
Seed-testerJ. H. Brown Separatory apparatusC. A. Jacobson et al. Sewing-machine or attachment for same	Т
Scoop J. A. Miller et al. Scraper and drag, Combined H. S. Wood Screw H. G. Reiniger Screw-driver H. Kinckiner et al. Screw driver. Spiral eye C. M. Wilson Seal W. K. Edgar Sectional chest G. P. Tilton Seed-tester J. H. Brown Separatory apparatus. C. A. Jacobson et al. Sewing-machine or attachment for same A. E. Holmberg Sewing-machine presser-bar-clamping device C. McNeil Sewing-machine trimming attachment W. Kohn Sharpening apparatus, Blade R. T. Winn Sharpening machines, Feed-finger for saw- J. P. Hedstrom Shears and scissors F. Meissner Sheet - conveying machines, Slow down mechanism for T. C. Dexter Sheet holder, Sample J. P. Tirrill Sheet-metal hox, Slip-cover F. Eberhart Shelf-frame with vertically-adjustable shelves R. Schuftan Shelving Sectional A. A. Oestreicher Shingle-drying machine C. Warwick Shingle-drying device P. E. Aronis Shoe-form W. S. Lougee Shovels, spades, and similar articles, Rolls for the manufacture of J. Atkins Shovels, spades, etc., Rolls for the manu-	A. A. I.
Sewing-machine trimming attachment W. Kohn Sharpening apparatus Blades R. T. Winn	Z.
Sharpening machines, Feed-finger for saw- J. P. Hedstrom	1. 1. 1.
Sheet conveying machines. Show down mechanism for	1. 1.
Sheet Holder, SampleJ. F. Firrill Sheet-metal box. Slip-coverF. Eberhart Shelf attachment, TentW. C. Brown	1. 1. 1.
Shelf-frame with vertically-adjustable shelves. R. Schuftan Stelving Sectional A. A. Oestreicher	1. 1.
Shingle-cutting machineC. Warwick Shingle-drying machineC. Warwick	1.
Shocking-toolJ. H. Michener, Jr. Shocking-toolC. M. Green	11
Shoe-cleaning device	77 77 77
for the manufacture ofJ. Atkins Shovels, spades, etc., Rolls for the manufacture of Atkins	17
Shuttle - threading implement. Portable pneumatic. A. Ricci	11 11
Skirt-marker A. Seeling Sled and wagon, Combination	F
Sn-oke-consuming furnace	R
Soap container, Liquid. W. Williams Solar-heat motor. E. H. McHenry Soat-blower	17
Sound-reproducing instruments. Needle for. A. E. Allwood	π π
Sound-transmitters, Mouthplece for	11 11 11
Spring-wheelT. C. Erb Spring-wheelV. I. Kimball Square, Die-maker'sF. J. Badge	η
Shovels, spades, and similar articles, Rolls for the manufacture of. J. Atkins Shovels, spades, etc., Rolls for the manufacture of. J. Atkins Shovels, spades, etc., Rolls for the manufacture of. J. Atkins Shovels, spades, etc., Rolls for the manufacture of. J. Atkins Shovels, spades, etc., Rolls for the manufacture of. J. Atkins Shovels, spades, etc., Rolls for the manufacture of. J. Atkins Shovels, etc., Rolls implement. Portable pneumatic. A. Ricci Skirt-marker. A. Seeling Sled and wagon, Combination. C. Heidenheimer Sn-oke-consuming furnace. W. E. Sudlow et al. Smut-machine. J. A. Stensrud Soap container, Liquid. W. Williams Solar-heat motor. E. H. McHenry Soot-blower. T. E. White Sound-reproducing instruments. Needle for. A. E. Allwood Sound-transmitters, Mouthpiece for. A. E. Allwood Sound-transmitters, Mouthpiece for. J. Graham Spool-finishing machine. A. C. Livermore Spring-wheel. T. C. Erb Spring-wheel. W. I. Kimball Square, Die-maker's. F. J. Badge Stacker, Pneumatic. J. E. Foster Stacker, Portable adjustable hay	Σ,
Stamp, DuplicatingE. D. Bosworth et al. Stamp-millE. P. Dargin Stamping, marking, or numbering machine	
StapleJ. R. Wheeler	Ι
Staple. J. R. Wheeler Starching-machine. E. E. Stone Starting device. J. P. Looney Stay-bolt for boilers, Flexible. B. E. D. Stafford Steam-boiler and stay-bolt for same. B. E. D. Stafford	A
Steam-boiler and stay-bolt for same B. E. D. Stafford Steam-boiler and stay-bolt for same	A
Steel tie	A
Stopper-extractor. C. W. Kinnear W. Halk	$\frac{A}{A}$

Stokers, Feeding fuel in blast-feed
Stokers, Feeding fuel in blast-feed. W. T. Hanna Stove. Stove. W. F. Pinkerton Stove, Gas. W. J. Kennedy Stoves and radiators, Apparatus for gas heating. A. L. Boucher Stove-pipe-hanger. M. P. Rendleman Strainer, Kettle- Stretching and drying frame. A. Bender Stretching and drying frame. A. Bender Stuffing-boxes, Device for cleaning the threads of. J. Maglenn Stump-eradicator. M. S. Presler Sugar, Mannfacture of. H. A. J. Manoury Surgical atomizer. A. Truesdale et al. Surgical forceps. P. Frisch Switch and fuse support and cover. W. J. Gibbons Tally-card sytsem. J. B. Brophy Tapping device. E. M. Hill et al. Telephone current-selector. E. Garretson Telephone-monthpiece, Antiseptic
Stove, GasW. J. Kennedy
Stoves and radiators, Apparatus for gas heating.
Stove-pipe-hangerM. P. Rendleman
Strainer, KettleJ. F. McCann Stretching and drying frame A Bender
Stuffing-boxes, Device for cleaning the
threads of
Sugar, Mannfacture of H. A. J. Manoury
Surgical atomizerA. Truesdale et al.
Switch and fuse support and cover
Tally-eard sytem J. B. Bronhy
Tapping deviceE. M. Hill et al.
Telephone current-selectorE. Garretson Telephone-ovchauge system J G Vitchell
Telephone-mouthpiece. Antiseptic
Tolophone-receivers Anomatic adjustable
holder for
Telephone-exenaige system. J. G. Mitchell Telephone-mouthpiece, Antiseptic
F. W. Dunbar
Telephone system, Intercommunicating
Telephone exetoms Anti-industion apparet
no for
Terret, Harness. B. Hanlon Tether, Decoy- J. H. Wattenburger Thermostatic motor F. Marti Thread-entting die G. G. Brown Ticket-holder F. L. O'Bryan Tie-spacer H. All et al.
Thermostatic motor F. Marti
Ticket-holderF. L. O'Bryan
Tie-spacer
TireT. W. Peet
Tire, PneumaticA. Hormel
Tool, ConvertibleE. T. Remisch
Torpedo-clipping machineF. Dutcher
ToyJ. C. Thrner
Transmission mechanism V. L. Lenkins
Trolley-pole, AutomatieJ. W. Lang
Truck Car- J. E. Osmer
Truck, RadiatorD. P. Larkins
Turbing, Flexible metallicC. T. Schoen Turbine, SteamG. C. N. Wallace
Turn-table, Automaic automobile
Type casting and composing machine and
type-writerR. P. Link et al. Type-rings and other articles. Forming
Ticket-holder F. L. O'Bryan Tie-spacer H. All et al. Tile-backing F. Alcan Tire. T. W. Peet Tire. Pneumatic A. Hormel Tire-tigthener F. F. Slay et al. Tool, Convertible E. T. Remisch Torpedo-clipping machine F. Dutcher Toy L. C. Bailey Toy L. C. Thrner Toy Jying-machine W. B. Luce Transmission mechanism M. L. Jenkins Trolley-pole, Antomatic J. W. Lang Trolley-restorer W. H. Stebbins, Jr. Truck, Car- J. E. Osmer Truck, Radiator- D. P. Larkins Thbing, Flexible metallic C. T. Schoen Turbine, Steam G. C. N. Wallace Turn-table, Automaic automobile P. A. Rasmus Type casting and composing machine and type-writer shift-frames, Anxiliary sup- port for W. Hess, Jr.
port for
Type-writing machineF. X. Wagner
Type-writing machineE. B. Hess
Type-writing machineA. T. Brown Type-writing machineO Woodward
Type-writer shift-frames, Anxiliary support for
Type-writing machines, Tabulating mech-
anism forT. L. Knapp
Vacuum-cleanerF. C. Wheeler
Vacuum-cleaper. F. C. Wheeler Vacuum cleaning systems, Separator-tank for C. R. Green Vacuum-tube. W. A. Winter et al. Valve. W. G. Taylor Valve, Drain. C. L. Armstrong Valve for vapor-burners T. Nagel Valve, Gas- M. Popkin Valve, Gas- M. J. Austin Valve mechanism J. W. Ledoux Vapor-burner J. M. L. Fleming Vehicle-enrtain support. C. C. Blackmore Vehicle platform-gear J. Errett
Vacuum-tube
Valve. Drain
Valve for vapor-burnersT. Nagel
Valve, Gas
Valve mechanismJ. W. Ledoux
Vehicle-curtain supportC. C. Blackmore
Vehicle platform-gearJ. Errett
Vehicles, Lantern-holder for H. J. Holmes
VelocipedeD. G. Caswell
F. A. Kummer
Voltage-regulator, Automatic
Washing-machine gearingC. J. Marth
Water-heaterS. W. Brown Water-jacket S. W. Traylor
Water-parifying apparatus
Water-tube boilerJ. E. Bell
Water-wheelJ. S. Beaver
Welding. Electric
Vapor-burner. J. M. L. Fleming Vehicle-centain support. C. C. Blackmore Vehicle platform-gear J. Errett Vehicle steering device. F. E. Morey Vehicles, Lantern-holder for. H. J. Holmes Velocitede. D. G. Caswell Volatile products from wood. Extracting F. A. Kummer Voltage-regulator, Antomatic. F. A. Kummer Voltage-regulator, Antomatic. G. A. Burnham Washing-machine gearing. C. J. Marth Water-heater. S. W. Brown Water-jacket. S. W. Traylor Water-parifying apparatus. E. S. Woods et al. Water-tube boiler. J. E. Bell Water-tube boiler. J. S. Beaver Welding. Electric. E. Thompson Welding-machine. Electric. E. Thompson Welding-machine. Electric. E. Winkley Wheel-cutting machine. M. Pedersen Wheel-detacher. V. W. Stranb Whip-socket. Locking. C. W. Winner Wind-power, Apparatus for storing and distributing. S. Piehault Wind-shield, Folding. E. H. Pratt Windmill-governor. W. A. Fifield Window construction. J. J. Smith Window construction. W. H. Worst et al. Wire-splicer. M. W. Fry Work-support. C. Meyer Wrench. H. Mendenhall et al. Wrench. E. Green Wringer. S. C. Lawlor Yarn, Elongating or drafting machine for production of recondensed W. H. Hoyle et al.
Wheel-cutting machineM. Pedersen
Wheel-detacherV. W. Stranb Whip-socketB. A Foster
Whip-socket, LockingC. W. Winner
tributing S. Pichault
Wind-shield, FoldingE. H. Pratt
Window constructionJ. J. Smith
Window constructionW. H. Worst et al.
Work-support. C. Meyer
WrenchH. Mendenball et al. WrenchE. Green
Wringer S. C. Lawlor
Yarn, Elongating or drafting machine for production of recondensed
W. H. Hoyle et al.
Issued February 28.1911.
MECHANICAL PATENTS. Acetylene tetrachlorid Producing

Acetylene tetrachlorid,	Producing
Adding-machine	
Advertising device	J. Weener et al.
Advertising device	C. W. Whaley
Advertising-poster	3. C. Murphy et al.
Aeroplane	E. K. A. Banmann
Aeroplane	

	_
Aeroplane	_
Air-brake attachment. J. W. Pagett et al. Air-brake hose-conpling	
Ammonium perchlorate, ProducingO. B. Carlson	
Alimentary product and making the same	
Atomizer. C. A. Pfanstiehl Atomizer. G. Baujard Antomobile accessory. L. and G. Gans	
Atomizer	
Barrel, CollapsibleJ. G. Johnson Batteries, Machine for filling dryP. P. Nungesser	
Bed. S. R. Lockhart Bed attachment, Invalid-, J. C. Van Slyke	
Bed-spring, FoldingW. E. Thompson Bed-spring tightenerS. W. Bennett et al. Beds, Cot attachment for invalid J. C. Van Slyke	
Bedclothes-holderI. A. Tritle Bechives, Press for attaching comb foun- dations to honey-frames for J. W. Ward	
Beet-topping mechanismH, F. Barber Belt drive for automatic, Single-, E. C. Henn Binder, Loose-leafT. R. Eddy Biscuit from cereal flakes, Machine for	
manufacturingJ. L. Kellogg Bismuth beta-naphtholate, Preparing J. L. Turner et al.	
Blower. Fan	
Bolt and nutV. McIntyre et al. Bolt-holderC. T. Tarver Book, Loose-leafW. P. Pitt Books etc. Holder for sales	
Bottle-cap remover	
Bottle, Non-refillableW. R. Grove Bottle, NursingW. M. Decker Bottle, Portable inkL. W. Aschemeier	
Boxes, Means for supplying paste to the coverings for	
Brick-hacking system and apparatus R. C. Penfield Brick-press	
Brushing-machineJ. F. Fromm Bucket, Bottom-door dumpG. Focht	
Bucket, Clam-shellN. P. E. Andersen Burglar-alarmA. Ambuhl Cable-wrapping machineH, D. Robinson Can I. E. Sexton	
Car and vehicle loader W. D. Mount Car-buffer T. L. McKeen Car-coupling J. G. Robinson	
Car door, Grain- H. C. Priche Car-fender J. B. Rowe Car guard-vail, Street- A. Loeb Car life-guard, Railway (2 pats.)	
Bottle case or carrier. E. C. Baldwin Bottle case or carrier. E. C. Baldwin Bottle, Non-refillable. G. W. Wood Bottle, Non-refillable. W. R. Grove Bottle, Nursing. W. M. Decker Bottle, Portable ink. L. W. Aschemeier Box-machine corner-turning apparatus	
Cars. Shoe for third-rail electricL. A. McCoubrie et al. CarbureterH. W. Ashmusen	
CarbureterJ. H. Friedenwald CarbureterJ. A. McHardy et al. CarbureterG. J. Dorman CarbureterB. J. Carbureter.	
Card-case E. F. Hamill Carpet, Combination stair and hall. F. Ames Cartridge belt or carrier. F. R. Batchelder	
Cashier, MechanicalE, S. Church Caskets, Head and shoulder support for T. W. Conghlin Castor R. J. Russol	
Casting-patternC. F. Forster Cellulosic and ligneous materials, Making a fermentable product from. W. P. Cohoe	
clucose-like product from W. P. Cohoe Cement blocks, Waterproofing, D. F. Shope Cement, Burning Portland	
Caskets, Head and shoulder support for T. W. Conghlin Caster. R. J. Russel Casting-pattern. C. F. Forster Cellulosic and ligneous materials, Making a fermentable product from. W. P. Cohoe Cellulosic and ligneous materials, Making a glucose-like product from. W. P. Cohoe Cement blocks. Waterproofing. D. F. Shope Cement, Burning Portland. F. L. Woods et al. Cement plaster. J. D. Cady Centrifugal machines, Means for support- ing and driving single-shaft. Centrifugal machines, Sugar-remover for R. P. Johnson	
Centrifugal machines, Sngar-remover for. R. P. Johnson	
Chilian mill	
Clock, Alarm	
Clothes-line prop. C. E. Robinson Clothes-line reel	
Clutch. J. M. Sailer Clutch. J. E. Beckman Coin-deliverer. T. Bilyen et al. Coke-ovens, Leveling apparatus for hor-	
Coke-ovens, Leveling apparatus for hor-	-

CollarF.	M. Maciarz
Collar. F. Collar. Collar. Collar. Collar. Collar. Collar. Concrete floor. Concrete-mixer charging device. T. L. Concrete reinforcement. Concrete structure, Reinforced W. Connecting device. J. V. Connecting device. J. V. Connecting-rod, Safety. S. Connection adjustment. S. Controlling device. C. E. Cooking machine, Pastry. Cooler or radiator sections, 2 making. D. M. Coop, Chicken. Core-boxes, Universal jolt-radehine for. T. Cork, Poison-bottle.	C. Ryan C. Fisher
Concrete floor	V. S. Hagan V. L. Jones
Concrete-mixer charging devices	eller. Smith et al.
Concrete reinforcement Concrete structure, Reinforced	R. W. Dull
Connecting deviceJ. V	J. Stewart V. Lawhend
Connecting-rod, Safety	. W. Hayes W. Hayes
Container	V. W. Beals L. Carpenter
Cooking machine, Pastry	S. F. Pierce dacking for
making	Livingston J. Elston
Core-boxes, Universal jolt-rai	nming ma-
Cork, Poison-bottle	R. A. Lect A. Trimble
Corn-sheller Cotton-waste or the like. Ap	J. M. Sailer paratus for
treating or cleaningW. Counting attachmentF. B	nttill et al. . Redingion
Crane. Train-orderF. Cultivator, SideA.	Hachmann T. Richard
Culvert. Sheet-metal	F. Ottney A. Foster
Cuspidor	F. Freeble D. Robbins
chine for	D. Robbins ing beamed
Dental casting-machine. F. W. V	. II. Pitney Vright et al.
Diaphragm, Iris	. Wollensak
Disinfecting device	J. Kneen
Direct-connected elevatorC. Disinfecting device Disintegrating and value-saving	g machine G. Marshall
Disposal-stations. Apparatus for	c. F. Cullen
Divan or couchO.	R. Mitchell
Door-holder	F. J. Lee
Door-lock A. Door-lock R.	L. Sweger
Display device, Biscuit-boxI Disposal-stations, Apparatus fo W. Divan or couchO. Door-brace Door-holder Door-jackA. Door-lockR. Door-releaser, Fire-engine-housC Doors, Fly-trap attachment for	O. Carter
Draft apparatus, ForceOrill. T.	E. Orr
DrierO	. S. Sleeper
Drilling bit Coal and rock	. W. Pratt
Drinking-fountainE	I. J. Milner J. Hall. Jr.
Drinking-fountain, Sanitary	Daly et al
Driving connection between the structure and chassis-frame	e rear axle A. P. Brush
Dust-arrester	P. J. Derrig M. Kugel
Dye. Oxazin	W. Lommel Iarvie et al.
Electric-light switch Electric-lighting apparatusA.	.C. Waguer A. Wahlauer
Electric secondary battery Electric switchJ. H. A.	P. Rabbidge Normandean
Electric switchC. A. Electrical connectionJ. X	. Pfanstiehl I. Andersen
Electrically-controlled elevator	O. Pearson
Elevated carrierJ. C	. Fitzgerald
material, Apparatus for	.O. Johnson
Embroidery-frameA	C. Pearson Rominger
Drier O Drill T Drill T Drill T Drill T I Drill	lveen et al.
Engines, Priming-cup for gasol	ene Swanberg
Envelop. SafetyJ.	. G. Geiger P. Sanders
Excavator and conveyor, Scrap	ing L. Potter
Engine-starter, AutomobileI Engines, Priming-cup for gasol F. L Envelop. Envelop, SafetyJ. Excavator and conveyor, Scrap L EyeletF Eyelet and the likeF Fabric-treating apparatns. Tex	. D. Ogden . D. Ogden
Fabric-treating apparatus, Tex	tile E. Palmer
Fan, MotorI. Fastenevs, Making corrugated	saw-toothed
metal. Fastening device, SpringJ.	M. Fischer Schade, Jr.
Faucet, Sandary drinkingI	D. Goff
Fiber-yielding materials. Appara	ntus for re-
Filaments for incandescent electrons	tric lamps.
Apparatus for making metani	C. Ellis
FirearmJ. O. V	an Voorhis
Firearms, Tool for automatic	.P. Mauser
Fastenevs, Making corrugated metal. Fastening device, Spring, J. Faucet, Sanitary drinking, J. Feed, Boiler- Fence-post, G. Fiber-yielding materials, Apparaducing, G. F. Filaments for incandescent elecapparatus for making metalli Finish-remover, Girearm, A. Firearm, J. O. V. Firearm trigger device, J. Firearms, Tool for automatic, Fiveproof system, P. K. Mag: Fluid-conveying tubes, Fluid-gui	ide for H. Sims
Fly-paper package	E. Latu C. Merrell
Fly-paper package	V. Badmau
Fruit. Grading and sterilizing	D. Parker
Fuel-feeding device, Automatic, Fuel-producerW. L. She	C. Lefferts A. R. Selden
Fuel-producerW. L. She Fnels, Device for increasing the ofC. Ma	pard et al. e efficiency
FurnaceH. Furnace-casing top	E. Wallis
Furnace. E. F. Furnace. II. Furnace-casing top. Furnace-front.Non-heatable W. J. Furniture W. Gage	Fredericks
FurnitureW.	A. Snyder C. Bodmer
Gage	. C. Baird

Game appara Garmeut-retai Garment-snpr Gas-blowpipe	tus. ning device porter. ers and ana ulator for reco with a centra	.G. A. D. R. A. . N. G	Wehner Basch Moore oodyear
Gas-calorimet ments, Reg	ers and ana ulator for reco	llogous ording .F. G.	instru- Beasley
Gas-farnace lar Gas-machine.	with a centra	I pillar, C. arlington	Annu- Deselle et_al.
Gas-pressnre mechanism. Gate	reducing a	nd reg J. B J. E.	culating . Hirst Corbin
Gear-case Gear-wheel Gearing		л. Е. V К. F Т. Н.	Vebster . Elers Siddall
Gearing, Char Gin-saw cleat Girdle. Bust-	nge-speed ner, Portable	W. T. A. B N. E.	Carter L Black Dunlap
Glass-mold Golf-stick Grain mill, I	Flaked	.J. J. J. J. M. J S. L.	Iuldoon IcLaren Moser
Grain renova Grain separa Grain-shocker	tor and drier tor and cleane	. L. J r G. T. M. G. 3	Johnson Pearce Slawson
Grain-shockin C., Grass or stal	g machine Jr., H., and A	Kenne	et al. Stinson
Gnn recoil de Guu-sight Guns. Fluid-l	evice, Field prake for nechanism for.	G. H. .W. He	- Falter Korrodi ilemann
Guns, Pull n Halter Handeuff	nechanism for.	M. He C. ′ F. B. Wi	rmsdorf Fallman dmayer
Harrow Harrow-tooth Harrows, Bo	xing for disk.I gar-cane stalk-elevator 1	О. Р И. Т. I. G. На	. Foote Goodell gemeier
Harvester, St Harvesters, S	ngar-cane Stalk-elevator 1	.J. T. N for corn- I. L.	eedham · Dawson
Hay-ford Hay-ford Hay-loader	on for	F. .W. H. O. F	Wright Kaiser Smith
Heater Heating appa Heating appa	ratus ratus. Portable	A. R. B. O e H. (Lundin . Adler '. Stout
Hinge-butt at	Stalk-elevator 1 on for uratus. ratus. Portable al. Train-cont ud mortise gas	rolled R. D. ge	Peters
Hounle	shieldJ. L. a	Bodme E. R. nd E. C	r et al. Cramer . Terry
Horseshoe Horseshoe		A. B C. S	ntschko S. Cook Wieder
Hose-supporte	er and fasten	er for C. E sheet-m	corsets, L. Clark etal
Hydraut	nd	W. O. O. B. Va	Sparks Storle n Vorce
Ice-forming a Incinerator, l Incubator-hea	pparatus Latrine ter	.W. F. J.	Johnson Conley Damon
Index and fil Index - memo predetermin	e randa appara ned card	.II. O. l tus, Au	Hibbard tomatic . Bates
Induction-coil Inkstand Insecticide pr	shield	J. M F. M. raying a J.	(cIntyre Ashley upparat- T. Hill
Insulation. M Insulator-sup Internal-comb	icaI. I port bustion engine.	Coope A. S A. E.	r et al. Scheible Osborn
Internal-comb Internal-comb Jar-closures.	port. Dustion engine oustion engine onston engine. Machine for ear and ng for car and ng for car and c	A. B. II. J. 1 forming	Brown Podlesak Tocking
devices for Journal-beari Journal-beari	ng ng for car and	H. F. S	chroder sles
Journal-beari pats.)	ng for car and	.J. E. M Lother .J. E. M	nnnea axles (2 Inhlfeld
Ladder Ladle, Cinder Lamp	rH. D. ?	T. Jauc Phompso . Arneso	n et al. n et al. n et al.
Lamp fixture Lamp, Gas Lamp, Incan	, Electic	. II. Hi	mphrey Knight
Lamp, Inver- Lamp recept	acle, Electric	nt gas A J. G. l	. Giorgi Peterson
Lamp-socket Lamps, Illun cent	inant for elec-	trical in M. T	reandes- 'howless luminat-
ing-bodies	for electric inc	andesce	nt F. Blan
Latch, Barn-	nfacturing me for electric inchine, Boot and door	J. E. W. F. C	Jackson Councily Mielier
Latch, Gate- Lanndry-net	clamp	\dots E. I	3. Gibbs Tutton I. Gibbs
Leather, Mar Leather-skivi	nufacturing ing machine Julum-support	J. T .F. M. forG	Conrser Conrser Dalen
Level Lever. Resili	ent compound.	D. F. L. W. V.	awrence Gilbert Goddard
Liquid-desice Liquid-fuel l Liquid-fuel l	ating apparatu ourner	ısI. S. II. W J. J	Merrell '. Schoff . Vallier
Liquid-separa Locks, Makir	nufacturing ing machine Inlum-support ent compound. ating apparatu urner itor ing tumblers for	J. E. r combiu R. C	Jeanson ation Lewis
Locomotive. Locomotive. Loom shuttle	Electric	W J. Grogs	Cooper in et al.
Mannre-loade Marker attac	e motion forerF. I eliment rice, Electroms	R. Helmo	er et al. Turner
the production of the Measuring c	melting of orestion ofR. hute, Grain	R. Moo	re et al. Decremer
Measuring t	the steam pas	.M. C.	Rypinski rough a
pipe, Appa	ratus for	11. Ru	mennerg

	\ 1
lechanical motorP. Homishak ledicinal-powder tollerJ. Toskov	Raze
ledicinal-powder tollerJ. Toskov ledicine-distributer for stock.G. L. Owens	Raz Refi
ledicine-distributor for stock G. L. Owens letal articles, Method of and apparatus for making C. A. Weeks letals, Production of divided F. Blau lill	tio Refi
lill	Refi Refi
lixing-machine	Rela Reli
Holding apparatus	el Roa
Iolding apparatusW. H. Fisher Iop head and wringer, Combined	Roc Roll
E. Koeb et al. IotorcycleL. II. Dyer	Roo Roo
lotor	Roo Roo
Intercycle	Rot Rot Rot
Husic-sheets, Apparatus for copying. W. H. Grimsdale Leck, back, throat, and chest protector. X. Neuman Lecktie-fastener. L. Kretschmer Leedle-threader. B. Moakleaf Lose-mark P. Moakleaf	Rng
	Rnl Sad
feedle-threader	Sad Sad
ozzle, Spray L. A. Brinkman (nt-lock	Sas. Saw
Oaklear Oaklear Oaklear	Saw
bil-cake pressB. Granger	San San Sca
il-cake press. B. Grauger biling arbor for shell-rollers, Self	Sec
crusped	Ser
Oven, Electric J. V. Chown Packing for valves. C. W. Miller Radlock, Combination W. A. Bailey	Sere tl
gadlock, CombinationW. A. Balley cadlock, PermutationI. Williams caint and varnish removerC. Ellis	Ser
aint and varnish remover	Sen
Paper and like bags, Manufacture of E. Robinson et al.	Sea Sea
E. Robiuson et al. caper-feeding mechanism. F. E. Hodgkinson caper-machine R. J. Scovill et al.	See
caper-feeding mechanism.F. E. Hodgkinson caper-machine	Sen Sen
Pedal crank-hanger. J. W. Fielding Pedal crank-hanger. A. M. Finharty	Sen
Thomograph. P. Weber Phonograph ston dovice P. Weber	Sen Sen
Photographic-print cutterC. F. Pease	Sen
riano-violin	Sha
Pier construction	Sha She
Piling, Clutch for metallic.C. T. Evenuette	She She
2in C. Knehner Pipe F. Cooper	Sho
Photographic-print cutter. C. F. Pease Plano-pedal attachment. H. B. Vanhook Plano-pedal attachment. H. B. Vanhook Plano-violin. H. Schlemmer Ple-making machine. J. F. Kohler Pler construction. G. Roeth Pleshell and forming concrete piles. A. A. Raymond Plling. Clntch for metallic C. T. Evenuette Plan. C. Knehner Ples. F. Cooper Ples. F. Cooper Ples. J. Fonrnia Pleshelling. Train. J. Fonrnia Pleshelling. Train. J. Fonrnia Pleshelling. Train. J. Pavidson, Jr. Plastol. A. Provaglio Pleshol. A. Provaglio Pleshol. Antomatic. J. H. Wesson Pleman connection. Self-adjusting. W. C. Benson	Sho Sho
J. Davidson, Jr.	Sho
Pistol, AutomaticI. H. Wesson Pitman connection, Self-adjusting	Ski Sla
Planing machines, Impelling pressure-roll-	Sm Sna
er for wood	Soc Soc
Pitman connection. Self-adjusting W. C. Benson W. C. Benson Planing machines, Impelling pressure-roll- er for wood C. K. Orton Planter Planter, Seed Planter, Seed Planter, Seed W. L. Dodd Planters, Covering attachment for hand corn M. A. Scanlon Plaster-board Plaster-board P. E. Roberts Play-ball G. L. Harvey Plow J. A. Rodman Plow Plow-beam Plow-fender Plow-fender S. L. Penny Plows, Wheel-guard for sulky or gang Prenmatic carpet-cleauer Prenmat	Sol- Sou Sou
Plaster-board	Son
Play-ballG. L. Harvey PlowJ. A. Rodman	Spi Spi
Plow	Spc Spr
Plows, Wheel-guard for snlky or gang	Spr Spr
Phonmatic carpet-cleanerE. Overholt	Squ Squ Squ
'Ala_bratagtar C' naig V Kananinggi	Sta
Power-transmission apparatns. L. B. May Power-transmission mechanism 	Sta Sta
Precions metals from associated materials,	Sta Str
Apparatus for separating. F. H. Frentiss Press. R. W. Hardie	Ste Ste Sti
Printer's rollers, MakingC. S. Hadley	Sti
Printing on wood (reissue) Printing on wood (reissue) Printing on wood (reissue) Printing - Printing on wood (reissue) Printing nechanism for cash-registers Printing on wood (reissue) Printing-plates. Making toned.	Sto
Printing mechanism for cash-registers W. F. Bockhoff et al.	stc.
Printing on wood (reissue)E. Josz Printing-plates, Making toned	Sul
Printing-prates. Miking toned	Sw Sw Ta
Propeller-puller	Ta
Pulverizer and leveler, Soil. T. V. Barnard Pump A. B. Strohm	Te:
Pump. Air E. E. Tryon Puzzle Erickson Racks, Holding attachment for	Те
Racks, Holding attachment for	Te
Rail and rail-joint	Tel Tel
Rail-joint J. Cusick Rail joint and fastener G. E. Martin Rail Third	Te Te Te
Bail, Third	Te
Railway-crossing. J. T. Walston Railway safety appliance. J. T. Andrew Railway-signal. D. H. Rowley	Th Th
Railway-spike	Th Th
P. ODonnell Railway-switch R. A. Neatherland Railway-tie E. W. Atkinson	Tic
Railway-tieE. W. Atkinson Railway-tieW. F. Walker	Tiı Tiı

izor. izor. ifrige	Sa: Sa ara f	fety fety ing	 :	······································	Autor	.C. H E.	. Atkins Kessler regula- in Winkler Connor Schafer Monette B. Rice ing ma- L. Burke Springer . Bayles . Cordes . Button H. Bell D. Blenis Jackson McGann Williams V. Green LICAdams V. Schoff H. Davis Scruby L. Blinn L. Blinn Russell Meadows Roberts Thebean Shigley . Brown . Thayer Gottsche older for Truman F, Hart	
tion	of	the	evap	oratin	g pres	ssure E. T.	in Winkler	
frige frige	erat erat	or.			j	A. C. F.	Connor Schafer	
efrige elay.	era t	01-0	ount	er	J	. W.	Monette B. Rice	
ensni chine	ng e. C	an lomb and	u no bined balti	ring ng na	ana n H	groovi J. E	ing ma- I. Burke Springer	
oastu ock-d oller	rill and	va Va Ha	Daki lve-11 urrow	otion.	bined	. L. С	. Bayles . Cordes	
oof o	g-el	rall eat.	cove	ring		Н J.	Button H. Bell	
oost,	Fu Po	mig ultr	ating y	; 	\cdots	. S. C J. II.). Blenis Jackson McCoup	
otary otary	en en en	gine gine gine	e : : (9 1	 nats.).		R. D.	Williams V. Green	
ng ai	ıd (earp	et h	older (2 pats F. D.	s.) Sewa	rd et al.	
aling (d-irc	-ma	chii Seli	ne f-hea	ting	G.	F. M H. W	IcAdams 7. Schoff 4. Davis	
id-iro iddle ish_lo	on, , F oek	Sen Iarr	ress	ing	 	J. J.	Scruby L. Blinn	
tw al	nd i lam	rim p, l	mer, Buzz-	Metal	i	II. (G. Miller Russell	
w-se	et a	ind	gage	, Com	. ∴. L. ıbined	$ \begin{bmatrix} \mathbf{N} & \mathbf{I} \\ \mathbf{B} & \mathbf{B} \end{bmatrix} $	Meadows Roberts	
eale.	п-а Va Еоог	og lve-i ner	tensi	on	• • • • • •	Ö. C. L. A	Shigley Brown	
reen	-bati	r he	older,	Adjn	stable	. G. T	. Thayer	
.1.6 M -	-cut -ma	tnış chi	c wre	nch Die a	0 nd_ta	3. J. ip ho	Gottsche lder for	
thre	ıdii Zi	ig (levice	es for	antoi	matic. C. L	Truman E Hart	
.Le //.	thr	ead	s by	grind	ing, I	roduc atters	eing ley et al.	
eam-c eat a	los tta	ing chin	strij ent.) Closet		i. W. G. J.	Merrick Moriarty	
eat a eedin	tta g a	nd ud	ent. cultiv	Hinge rating	d mach	W. G. ine, C	Combined Cordes	
 Wer-	pip	e-jo echi	int p	rotect inding	or atta	F.	W. Lang	
win	2-111 2-111	achi	ine el	lectric	moto	C. r . F. 1	F. Gray P. Hnyck	
wing	ğ-m	ach	ine f	eeding	g-off d	levice . A.	Dirmann	
wing	g-m	achi 	ine I	or last	roller	J. E.	Jackson electric	
inote inde-	g-m ors roll	for. er.	ines. Sprii	 1g		.F. I W. M	P. Huyck Decker	
iaft- heari	cou ng-	plin ntae	g hine.			C. He	enriksson H. John	
icet- lieet-	feec regi	hug stei	app ing :	aratus ippara	tns	W.	J. Main	
nervi hoek-	ng, -loa crim	me der. mer				w.e	Vollers P. Specr	
hoe-f hoe-f	orn	1 1. I	iollov			. M. .L. M	B. Reach Carroll	
hattl ignal	e. I -bla	Пап ide.	d-thr	eading		G. M M. D M. Br	. Hanlon . Hanlon	
Kirt-i lashe malti	nar r	Ker. furi	 	Electi	W	. S. . E. I	Pepperell R. Taylor	
nap-s ocket	wit -ca	ch.				$\widetilde{\mathbf{W}}$.	J. Klein M. Black	
ocket older	-ca ing	p ma	chin	Tul	e	J. M.	Fedders Weiss	
ound	-pro	rod	ucing	instr	umen	t Н. Н	Gottsche Ider for Iruman F. Hart Eing ley et al. Moriarty Winans Combined Cordes W. Lang Ir. F. Gray Hnyck Ir. Dirmann Ind shoes Jackson electric Huyck Ir. Decker Enriksson H. John Kramer J. Main E. Stuck Ir. Stuck Ir. Ir. Ballard Ir.	
onud pigot	Ţ	rans	smiss	ion of		s.	E. Gray Z. Scott	
pike. pool,	М	 •tall	 lic	F	. j. i	$\inf_{\mathbf{w}}$	J. Olson ook et al.	
preac pring	1-h6 g ee	ook. onst:	ructio	on		.w. E.	R. Smith	
quar quar	e, 1 e, 1	sepa Ery-	rable	steel	i	J. A. W.	A. Wray Benskin	
duee: tamp	zer. ing	-ma	chine	. Pow	er	J	. P. Roe . Murphy Bigolow	
taple tapli	e dr ng	ive mec	ana hanis alder	extrac		.E. P .J. F	Sheldon Walter	
tay, team	Wi -tra	re g TD	garme	ent	j	.W. I	E. Barnes McKeown	
teel tenci	and ling	in g-ma	got-ii ieliin	ron, M e	Iaking J.	E. SI	aver. Jr. Hunter	
turu titch	p. : ing bin	sare me	chan	ism fo	r sign	nture- W.	ook et al., Clayton R. Smith Stewart A. Wray Benskin P. Roe Murphy Bigelow Sheldon E. Barnes McKeown B. Talbot naver, Jr., Hunter gathering I. Lewis I. Smith	
tone-	-sav mec	ving than	mac ism,	hine. Autoi	matic	J. limit	J. Smith	
topp	 er-€	xtr	actor	• • • • • •		E	W. Spear B. Radtke W. Feld	
ulfui wite	ե Օ հ հ	ora:			C	. Е. А	Carpenter Clayton	
wite wite	lı-tl lıol	row din	er. gand	Autom I disp	atic. laying	box.	McNeil	
'arge	t-tr	 ap.				J. A. N. W	Adamson 7. Benner Hollands	
'ea c 'eleg: 'eleg:	rapl rapl	oire h. I	e por Trinti Tecci	ng ving o	rganis	.J. J. m (2	Vermeer pats.)	
elen.	hon	e a	 ppara	itus,	Coin-c	ontro	gathering I. Lewis J. Smith W. Spear B. Radtke W. Feld Carpenter Clayton MeNell Adamson Hollands Vermeer pats.) I. Kitsee Illed Aitken P. Meade Aitken einberger Bayless M. Leich	
elep	lion	e ii	ıstru	ment.		$V_{\rm D}$	r. Meade V. Aitken einberger	
elep 'elep 'eler	non hon	e-m e-pe	outhy le, T	nece Portabl	le	.G. J	. Bayless M. Leich	
elep	hon	e-tr	ansm	itter	cut-or	it	M. Leich Hartnett A. Bahan Marschall E. Boyd V. Kunde dhammer ice	
ent hern	con	stru Iect	rie l	attery	· · · · · · · · · · · · · · · · · · ·	j.	A. Bahan Marsehall E. Boyd	
'hrea 'bree	d e din	utte	er, V	Vrappi	ng		V. Kunde dhammer	
licke	t se	ver	ing a	nd ret	tainin J	g devi	ratterson	
lime-	reg	aiat	or		А. В.	Thon	E. Hnnt	

Cire, Vehicle-wheel. L. A. Coleman Cougs, Pie G. Cooper Vorch, Blow E. G. Brandt Coy, Aerial F. A. Terry Coy, Aerial F. A. Terry Coy, Mechanical C. A. Lewis Traction-engine O. P. Conger et al. Transfer mechanism T. R. Cook Transfer mechanism T. R. Cook Transfer system, Freight M. B. Waterman Fransplanter A. G. Jacobs Trolley-circuit closer G. R. Livergood et al. Trolley-staud B. B. Bowers Trnck, Brickmaker's B. C. Heater Fruck, Car-H. A. F. Campbell Fruck-lock, Automatic J. C. McNaught Fubbing W. Huttanus Tubing-spear W. Lang Tubo-compressors, Cooling apparatus for W. Grun
Tougs, PieG. Cooper
forch, BlowE. G. Brandt
Toy, AerialF. A. Terry
Foy. Mechanical
Fraction-engine. O. P. Conger et al
Fransfer mechanism T R Cook
Propostor gratom Project M. P. Weterman
Evaportantos
transplanter
Proney-circuit closer.G. R. Livergood et al.
Crolley-stand
Crnck, Brickmaker'sB. C. Heater
Fruck, Car
Frack, ElevatingJ. L. Sellers
Fruck-lock, AutomaticI. C. McNaught
Pubbing W Huttanus
Pubing appear W. Lang
Public compactance Cooling expansion for
turoo-compressors, Cooning apparatus for
W. Grun
Turning-tools, work-supporting rest for
J. Hartness
I'nrnstileJ. F. Perey
I'wyer, Blazing
Tying device and label-holder, Combined
E. F. Maffry
Type-writers Automatic envelop and card
fooding attachment for
W H and D P Madudla
Turbo-compressors, Cooling apparatns for W. Grun Furning-tools, Work-supporting rest for J. Hartness Furnstile F. Perey Fwyer, Blazing C. A. Case Fying device and label-holder, Combined E. F. Maffry Fype-writers, Automatic envelop and card feeding attachment for W. H. and R. B. McArdle Fype-writers, Automatic feeder for W. H. and R. B. McArdle Fype-writing machine Fype-writing machine Fype-writing machine O. Thieme
Type-writers, Automatic feeder for
Type-writing machineA. T. Brown
Type-writing machine
Type-writing machines, Platen-release for
O. Thieme Umbrella-fastener
Umbrella-fastener W Kootz
Volvo V P Permeger at al
Valve A. V. Cloring
Valve
varve
valve
Valve G. W. Hammoud
Valve-controlling mechanismT. Hughes
Value for booting systems F F Cold
valve for neating systems E. Gold
Valve. RadiatorJ. B. Morgan et al.
Valve for heating systemsE. Good Valve, RadiatorJ. B. Morgan et al. Valve SafetyN. Goodyear
Valve, RadiatorJ. B. Morgan et al. Valve, SafetyN. Goodyear Vant-light K. E. Landin
Valve, Radiator- J. B. Morgan et al. Valve, Safety- N. Goodyear Vanlt-light K, E. Lundin Vabiele J. C. and J. J. Raum
Valve, Radiator. J. B. Morgan et al. Valve, Safety- N. Goodyear Vanlt-light. K. E. Lundin Vehiele J. C. and J. J. Raum Vehiele W. Siverd
Valve, Radiator. J. B. Morgan et al. Valve, Safety- N. Goodyear Vanlt-light K. E. Lundin Vehicle J. C. and J. J. Raum Vehicle-brake W. Siverd
Valve, Radiator. J. B. Morgan et al. Valve, Safety. N. Goodyear Vanut-light K. E. Lundin Vehicle. J. C. and J. J. Raum Vehicle-brake W. Siverd Vending-machine. J. H. Walter
Valve, Radiator. J. B. Morgan et al. Valve, Safety. N. Goodyear Vanlt-light. K. E. Lundin Vehicle. J. C. and J. J. Raum Vehicle-brake. W. Siverd Vending-machine. J. H. Walter Vending-machine. L. H. Dupont et al.
Valve, Radiator. J. B. Morgan et al. Valve, Safety- N. Goodyear Vanlt-light. K. E. Lundin Vehicle. J. C. and J. J. Raum Vehicle-brake. W. Siverd Vending-machine. J. H. Walter Vending-machine. L. H. Dupont et al. Ventilating device. M. B. Cunningham
Valve, Radiator. J. B. Morgan et al. Valve, Safety- N. Goodyear Vanut-light K. E. Lundin Vehicle. J. C. and J. J. Raum Vehicle-brake W. Siverd Vending-machine J. H. Walter Vending-machine L. H. Dupont et al. Ventilating device M. B. Cunningham Ventilator W. H. Cummings
Valve, Radiator. J. B. Morgan et al. Valve, Safety- N. Goodyear Vanut-light K. E. Lundin Vehicle J. C. and J. J. Raum Vehicle-brake W. Siverd Vending-machine J. H. Dupont et al. Ventilating device M. B. Cunningham Ventilator W. H. Cummings Ventilator E. Gold
Valve, Radiator. J. B. Morgan et al. Valve, Safety- N. Goodyear Vanlt-light. K. E. Lundin Vehiele. J. C. and J. J. Raum Vehiele-brake. W. Siverd Vending-machine. J. H. Walter Vending-machine. L. H. Dupont et al. Ventilating device. M. B. Cunningham Ventilator. W. H. Cummings Ventilator. E. E. Gold Ventilator. T. M. Barbee
Valve, Radiator. J. B. Morgan et al. Valve, Safety- N. Goodyear Vanut-light K. E. Lundin Vehicle. J. C. and J. J. Raum Vehicle-brake W. Siverd Vending-machine L. H. Dupont et al. Ventilating device M. B. Cunningham Ventilator W. H. Cummings Ventilator E. E. Gold Vensel-making machine J. J. Porter Vessel-making machine J. J. Porter
Valve, Radiator. J. B. Morgan et al. Valve, Safety- N. Goodyear Vanut-light K. E. Lundin Vehicle J. C. and J. J. Raum Vehicle-brake W. Siverd Vending-machine J. H. Dupont et al. Ventilating device M. B. Cunningham Ventilator W. H. Cummings Ventilator E. E. Gold Ventilator T. M. Barbee Vessel-making machine J. J. Porter Wagon-brake Automatic R. Anliker
Valve, Radiator. J. B. Morgan et al. Valve, Safety- N. Goodyear Vanlt-light K. E. Lundin Vehicle. J. C. and J. J. Raum Vehicle-brake. W. Siverd Vending-machine. J. H. Dupont et al. Ventilating device. M. B. Cunningham Ventilator. W. H. Cummings Ventilator. E. E. Gold Ventilator T. M. Barbee Vessel-making machine. J. J. Porter Wagon-brake, Automatic. R. Anliker Wall construction. J. Davey
Valve, Radiator. J. B. Morgan et al. Valve, Safety- N. Goodyear Vanut-light K. E. Lundin Vehicle. J. C. and J. J. Raum Vehicle-brake W. Siverd Vending-machine. J. H. Walter Vending-machine. L. H. Dupont et al. Ventilating device. M. B. Cunningham Ventilator W. H. Cummings Ventilator E. E. Gold Ventilator T. M. Barbee Vessel-making machine. J. J. Porter Wagon-brake, Automatic R. Anliker Wall construction J. Davey Washing-machine T. Wright
Valve, Radiator. J. B. Morgan et al. Valve, Safety- N. Goodyear Vanut-light K. E. Lundin Vehicle J. C. and J. J. Raum Vehicle-brake W. Siverd Vending-machine J. H. Dupont et al. Ventilating device M. B. Cunningham Ventilator W. H. Cummings Ventilator E. E. Gold Ventilator T. M. Barbee Vessel-making machine J. J. Porter Wagon-brake, Automatic R. Anliker Wall construction J. Davey Washing-machine T. Wright Watch L. Gold
Valve, Radiator. J. B. Morgan et al. Valve, Safety- N. Goodyear Vanlt-light K. E. Lundin Vehicle J. C. and J. J. Raum Vehicle-brake W. Siverd Vending-machine J. H. Walter Vending-machine L. H. Dupont et al. Ventilating device M. B. Cunningham Ventilator W. H. Cummings Ventilator E. E. Gold Ventilator T. M. Barbee Vessel-making machine J. J. Porter Wagon-brake, Automatic R. Anliker Wall construction J. Davey Washing-machine T. Wright Watch I. Gold Watch Ventor and boiler Combined C. Hart
Valve, Radiator. J. B. Morgan et al. Valve, Safety- N. Goodyear Vanut-light K. E. Lundin Vehicle. J. C. and J. J. Raum Vehicle-brake W. Siverd Vending-machine. J. H. Walter Vending-machine. L. H. Dupont et al. Ventilating device. M. B. Cunningham Ventilator W. H. Cummings Ventilator E. E. Gold Ventilator T. M. Barbee Vessel-making machine. J. J. Porter Wagon-brake, Automatic. R. Anliker Wall construction J. Davey Washing-machine. T. Wright Watch. I. Gold Water-heater and boiler, Combined C. Hart
Valve, Radiator. J. B. Morgan et al. Valve, Safety- N. Goodyear Vanlt-light K. E. Lundin Vehicle J. C. and J. J. Raum Vehicle-brake W. Siverd Vending-machine J. H. Dupont et al. Ventilating device M. B. Cunningham Ventilator W. H. Cummings Ventilator E. E. Gold Ventilator T. M. Barbee Vessel-making machine J. J. Porter Wagon-brake, Automatic R. Anliker Wall construction J. Davey Washing-machine T. Wright Water-heater and boiler, Combined C. Hart Water-heaters. Collapsible tray for combined
Valve, Radiator. J. B. Morgan et al. Valve, Safety- N. Goodyear Vanlt-light K. E. Lundin Vehicle J. C. and J. J. Raum Vehicle-brake W. Siverd Vending-machine J. H. Dupont et al. Ventilating device M. B. Cunningham Ventilator W. H. Cummings Ventilator E. E. Gold Ventilator T. M. Barbee Vessel-making machine J. J. Porter Wagon-brake, Automatic R. Anliker Wall construction J. Davey Washing-machine T. Wright Watch I. Gold Water-heater and boiler, Combined C. Hart Water-heaters, Collapsible tray for
Valve, Radiator. J. B. Morgan et al. Valve, Safety- N. Goodyear Vanut-light K. E. Lundin Vehicle J. C. and J. J. Raum Vehicle-brake W. Siverd Vending-machine J. H. Walter Vending-machine L. H. Dupont et al. Ventilating device M. B. Cunningham Ventilator W. H. Cummings Ventilator E. E. Gold Ventilator T. M. Barbee Vessel-making machine J. J. Porter Wagon-brake, Automatic R. Anliker Wall construction J. Davey Washing-machine T. Wright Watch I. Gold Water-heater and boiler, Combined C. Hart Water-heaters, Collapsible tray for J. W. Gamblie Water-mains and waste-pipes, Cleaner for
Valve, Radiator. J. B. Morgan et al. Valve, Safety- N. Goodyear Vanht-light K. E. Lundin Vehicle. J. C. and J. J. Raum Vehicle-brake W. Siverd Vending-machine. J. H. Walter Vending-machine. L. H. Dupont et al. Ventilating device. M. B. Cunningham Ventilator W. H. Cummings Ventilator E. E. Gold Ventilator T. M. Barbee Vessel-making machine. J. J. Porter Wagon-brake, Automatic R. Anliker Wall construction J. Davey Wall construction J. Davey Water-heater and boiler, Combined C. Hart Water-heaters. Collapsible tray for. Water-mains and waste-pipes, Cleaner for. J. Kohrman
Valve, Radiator. J. B. Morgan et al. Valve, Safety- N. Goodyear Vanlt-light K. E. Lundin Vehicle J. C. and J. J. Raum Vehicle-brake W. Siverd Vending-machine J. H. Dupont et al. Ventilating device M. B. Cunningham Ventilator W. H. Cummings Ventilator E. E. Gold Ventilator T. M. Barbee Vessel-making machine J. J. Porter Wagon-brake, Automatic R. Anliker Wall construction J. Davey Washing-machine T. Wright Watch I. Gold Water-heater and boiler, Combined C. Hart Water-heaters, Collapsible tray for J. W. Gamble Water-mains and waste-pipes, Cleaner for J. Kohrman Water-regulator, Automatic A. C. Culver
Valve, Radiator. J. B. Morgan et al. Valve, Safety- N. Goodyear Vanut-light K. E. Lundin Vehicle. J. C. and J. J. Raum Vehicle-brake W. Siverd Vending-machine. J. H. Walter Vending-machine. L. H. Dupont et al. Ventilating device. M. B. Cunningham Ventilator W. H. Cummings Ventilator E. E. Gold Ventilator T. M. Barbee Vessel-making machine. J. J. Porter Wagon-brake, Automatic. R. Anliker Wall construction J. Davey Washing-machine. T. Wright Watch. I. Gold Water-heater and boiler, Combined C. Hart Water-heaters, Collapsible tray for J. W. Gamblie Water-mains and waste-pipes, Cleaner for J. Kohrman Water-regulator, Automatic. A. C. Culver Watering and spraying apparatus
Valve, Radiator. J. B. Morgan et al. Valve, Safety- N. Goodyear Vanht-light K. E. Lundin Vehicle J. C. and J. J. Raum Vehicle-brake W. Siverd Vending-machine J. H. Dupont et al. Vending-machine L. H. Dupont et al. Ventilating device M. B. Cunningham Ventilator W. H. Cummings Ventilator E. E. Gold Ventilator T. M. Barbee Vessel-making machine J. J. Porter Wagon-brake, Automatic R. Anliker Wall construction J. Davey Washing-machine T. Wright Watch I. Gold Water-heater and boiler, Combined C. Hart Water-heaters. Collapsible tray for. J. W. Gamble Water-nains and waste-pipes, Cleaner for. J. Kohrman Water-regulator, Automatic A. C. Culver Watering and spraying apparatus. H. F. Zieman H. F. Zieman
Valve Radiator J. B. Morgan et al. Valve, Rafety- N. Goodyear Vanlt-light K. E. Lundin Vehicle J. C. and J. J. Raum Vehicle J. C. and J. J. Raum Vehicle-brake W. Siverd Vending-machine L. H. Dupont et al. Ventilating device M. B. Cunningham Ventilator W. H. Cummings Ventilator E. E. Gold Ventilator T. M. Barbee Vessel-making machine J. J. Porter Wagon-brake, Automatic R. Anliker Wall construction J. Davey Washing-machine T. Wright Watch I. Gold Water-heater and boiler, Combined C. Hart Water-heaters. Collapsible tray for. Water-neains and waste-pipes, Cleaner for. J. Kohrman Water-regulator, Automatic A. C. Culver Watering and spraying apparatus. Well-casing spear J. B. Norris Well-casing spear J. B. Norris
Valve, Radiator. J. B. Morgan et al. Valve, Safety- N. Goodyear Vanut-light K. E. Lundin Vehicle. J. C. and J. J. Raum Vehicle-brake W. Siverd Vending-machine. J. H. Walter Vending-machine. L. H. Dupont et al. Ventilating device. M. B. Cunningham Ventilator W. H. Cummings Ventilator E. E. Gold Ventilator E. E. Gold Vensel-making machine. J. J. Porter Wagon-brake, Automatic. R. Anliker Wall construction J. Davey Washing-machine. T. Wright Watch. I. Gold Water-heater and boiler, Combined C. Hart Water-heaters, Collapsible tray for J. W. Gamblie Water-mains and waste-pipes, Cleaner for J. Kohrman Water-regulator, Automatic. A. C. Culver Watering and spraying apparatus. Well-casing spear J. B. Norris Wheel lock Steering T. T. D. Stanley
Valve, Radiator. J. B. Morgan et al. Valve, Safety- N. Goodyear Vanlt-light K. E. Lundin Vehicle. J. C. and J. J. Raum Vehicle-brake W. Siverd Vending-machine. J. H. Walter Vending-machine. L. H. Dupont et al. Ventilating device. M. B. Cunningham Ventilator W. H. Cummings Ventilator T. M. Barbee Vessel-making machine. J. J. Porter Wagon-brake, Automatic R. Anliker Wall construction J. Davey Washing-machine T. Wright Watch I. Gold Water-heater and boiler, Combined C. Hart Water-heaters. Collapsible tray for. J. W. Gamble Water-mains and waste-pipes, Cleaner for. J. Kohrman Water-regulator, Automatic A. C. Culver Watering and spraying apparatus. Well-casing spear J. B. Norris Wheel lock, Steering- T. D. Stanley Wheels Sheath for vehicle- W. K. Omick
Valve Radiator J. B. Morgan et al. Valve, Rafety N. Goodyear Vanlt-light K. E. Lundin Vehicle J. C. and J. J. Raum Vehicle-brake W. Siverd Vending-machine J. H. Walter Vending-machine L. H. Dupont et al. Ventilating device M. B. Cunningham Ventilator W. H. Cummings Ventilator E. E. Gold Ventilator T. M. Barbee Vessel-making machine J. J. Porter Wagon-brake, Automatic R. Anliker Wall construction J. Davey Washing-machine T. Wright Watch I. Gold Water-heater and boiler, Combined C. Hart Water-heaters. Collapsible tray for. Water-nains and waste-pipes, Cleaner for. J. W. Gamble Water-regulator, Automatic A. C. Culver Watering and spraying apparatus. Watering and spraying apparatus. Well-casing spear J. B. Norris Wheel lock, Steering T. D. Stanley Whieles, Sheath for vehicle W. K. Omick
Watering and spraying apparatus
Watering and spraying apparatus H. F. Zieman Well-casing spear J. B. Norris Wheel lock, Steering T. D. Stanley Wheels, Sheath for vehicle W. K. Omick Whip-lock E. W. Bonner Wind-shield W. M. Bean Windmill W. P. Bennett Window, Storm Window, Storm W. Keller Wire coll W. Keller
Watering and spraying apparatus H. F. Zieman Well-casing spear J. B. Norris Wheel lock, Steering T. D. Stanley Wheels, Sheath for vehicle W. K. Omick Whip-lock E. W. Bonner Wind-shield W. M. Bean Windmill W. P. Bennett Window, Storm Window, Storm W. Keller Wire coll W. Keller
Watering and spraying apparatus H. F. Zieman Well-casing spear J. B. Norris Wheel lock, Steering T. D. Stanley Wheels, Sheath for vehicle W. K. Omick Whip-lock E. W. Bonner Wind-shield W. M. Bean Windmill W. P. Bennett Window, Storm Window, Storm W. Keller Wire coll W. Keller
Watering and spraying apparatus H. F. Zieman Well-casing spear J. B. Norris Wheel lock, Steering T. D. Stanley Wheels, Sheath for vehicle W. K. Omick Whip-lock E. W. Bonner Wind-shield W. M. Bean Windmill W. P. Bennett Window, Storm Window, Storm W. Keller Wire coll W. Keller
Watering and spraying apparatus H. F. Zieman Well-casing spear J. B. Norris Wheel lock, Steering T. D. Stanley Wheels, Sheath for vehicle W. K. Omick Whip-lock E. W. Bonner Wind-shield W. M. Bean Windmill W. P. Bennett Window, Storm Window, Storm W. Keller Wire coll W. Keller
Watering and spraying apparatus
Watering and spraying apparatus
Unbrella-fastener. W. Kootz Valve. Valve. V. B. Bernesser et al. Valve. A. V. Clorins Valve. W. A. Speakman Valve. W. A. Speakman Valve. F. M. Patterson Valve. G. W. Hammoud Valve-controlling mechanism. T. Hughes Valve for heating systems. E. E. Gold Valve, Radiator. J. B. Morgan et al. Valve, Radiator. J. B. Morgan et al. Valve, Safety- N. Goodyear Vanit-light. K. E. Lundin Vehicle. J. C. and J. J. Raum Vehicle-brake. W. Siverd Vending-machine. J. H. Dupont et al. Ventilating device. M. B. Cunningham Ventilator. W. H. Cummings Ventilator. E. E. Gold Ventilator. T. M. Barbee Vessel-making machine. J. J. Porter Wagon-brake. Automatic. R. Anliker Wall construction. J. Davey Washing-machine. T. Wright Watch. I. Gold Water-heaters and boiler, Combined. C. Hart Water-heaters. Collapsible tray for J. Kohrman Water-neater and boiler, Combined. C. Hart Water-heaters. Automatic. A. C. Culver Watering and spraying apparatus J. Kohrman Water-cegulator, Automatic. A. C. Culver Watering and spraying apparatus J. Kohrman Water-regulator, Automatic. A. C. Culver Watering and spraying apparatus J. Kohrman Wire coil. W. K. Omick Whip-lock. Steering- T. D. Stanley Wind-shield. W. M. Bean Windmill. W. P. Bennett Windmill. A. F. Barrow Wind-shield. W. M. Bean Windmill. W. P. Bennett Windmill. A. F. Rarrow Windesk, Apparatns for treating J. B. Card et al. Wrapping-machine. N. J. Matthews et al. Wrapping-machine. N. J. Matthews Wrench. L. Bekker Wrench. L. Bekker Wrench. R. S. Clark
Watering and spraying apparatus H. F. Zieman Well-casing spear J. B. Norris Wheel lock, Steering T. D. Stanley Wheels, Sheath for vehicle W. K. Omick Whip-lock E. W. Bonner Wind-shield W. M. Bean Windmill W. P. Bennett Window, Storm Window, Storm W. Keller Wire coll W. Keller
Watering and spraying apparatus
Watering and spraying apparatus

Prenmatic carpet-cleauerE. E. Overholt	Square, Separable steelA. W. Benskin Square, TryA. U. Benskin	MECHANICAL PATENTS.
Puenmatic enshion for vehicles, L. R. Gruss	Canoprov	Acids and making same, Derivative of oxy-
Pole-protector (2 pats.)V. Konopinski	Stamping-machine, PowerW. J. Marphy	arylarsinic
Power-transmission apparatusL. B. May	Stuple drive and extractor IX. Discreme	Advertising adding-pocketG. T. Young
Power-transmission mechanism	Stapling mechanismE. P. Sheldon	Advertising device or toyW. J. Bernett
	Stationery-holderJ. F. Walter Stationery-holderW E. Barnes	Aero-traveler
Power-wheel	Stay, Wire garment- W. E. Barnes Stam-trap. J. B. McKeown	Air-purifying machine J. Zellweger
Precious metals from associated materials, Apparatus for separating. F. H. Prentiss	stool and ingot-iron Making Idinot	Air-strainer, SuctionA. England AirshipW. H. Harrison
PressR. W. Hardie	Gtanailing maghine . I. E. Shaver Jr.	Ammonium nitrae, Making pure
Pressing-machine	Chiump Cafotva I. It. Hunter	O. Nydegger
Printer's rollers, MakingC. S. Hadley	- ettablise moongniem for styllillufuseduicitus	Anusement deviceN. Badisco
Printing apparatusA. Waller	machines	Animal-trap
Printing apparatus controlled by perforat-	Stone-sawing machineJ. J. Smith	Antispreager
ed tapeF. G. Creed	Stop mechanism, Automatic limit	Armature, Magneto-dynamo
Printing mechanism for cash-registers W. F. Bockhoff et al.	Stopper-extractor. B. Radtke	Ash-dischargerF. P. Palen et al.
Printing on wood (reissue)E. Josz	Culfue Obtaining	Auditor's report, Combination. N. F. Garbo
Printing-plates, Making toned	- Cyritah	Automobile wheel-helpG. Sprung
	SwitchB. A. CRyton	Antomobiles and to prevent injury from
Printing-press brakeI. Thomson	Switch-thrower, AutomaticE. McNen	back-firing of engines, Mechanism for
PropellerJ. H. Smith	Tape holding and displaying box	erankingF. G. Preston
Propeller-puller	Target-trap. J. A. Adamson Target-trap. N. W. Benner	Awning and arm thereforF. A. Anton
Pulley construction, SashH. G. Voight	Tea or coffee potJ. C. Hollands	Axle
Pulverizer and leveler, Soil. T. V. Barnard PumpA. B. Strohm	Tolograph Printing J. J. Vermeer	Bag-tying deviceF. Muckley
Pump. Air E. E. Tryon	Walassankia racciving organism (2 Dalls.)	Bait-receptacleA. C. Seeger
PuzzleG. E. Erickson	I. Kitsee	Baking apparatusC. F. Hartmann
Racks. Holding attachment for	Tralambana annaratus Conn-controlleu	Band-cutters and feeders, Governor for
E. W. Senecal	Telephone apparatus, D. P. Meade Telephone instrument	Paris many h
Rail and rail-joint	Telephone-mouthpiece L. Steinberger	Basin-wrenchJ. Wood Basket, FeedD. P. Sammon
Rail-fastener	Tolophone-nole, Portable,, G. J. Bayless	Basket, Fruit
Rail joint and fastenerG. E. Martin	Telephone system	Bath-tub supply-pipe connection
Bail. Third	Tolonhone-transmitter cut-out	W. G. Stewart
Railway cross-tie		Bed and lounging table
Railway-crossingJ. T. Walston	Tent constructionA. Bahan	Red-bottomC. R. Clucus
Railway safety applianceJ. T. Andrew	Thermo-electric battery. J. Marschall Thill. E. Boyd	Bed, CollapsibleH. Ackermanu Bed, CouchC. L. Plnnkett
Railway-signalD. II. Rowley Railway-spikeC. A. Flanagan	Thread cutter, WrappingW. Kunde	Belt and snpporting-rollers, Traction
Railway-spike and steel-tie fastener	Threading-tool A. Niednammer	P. E. Holt
P. ODonnell	Field to severing and retaining device	Binder, Loose-leaf
Railway-switchR. A. Neatherland	J. C. Patterson	Block-mold
Railway-tieE. W. Atkinson	Time-regulator. T. E. Hunt Tire. A. B. Thoman et al.	Blowpipe apparatusG. W. Hopkins
Railway-tie	Tire-patchG. J. Martel	Boat constructionE. L. M. Sivard Boat, Submarine or submersible.C. Laurenti
Railway tie or sleeperW. L. Sykes	Tire-removing apparatus J. Lassale	Boiler level-indicatorF. Pearson
Razor blade, SafetyO. Kampfe	Tire-removing apparatus 3. Dassale	201101 10.01 111111111111111111111111111

BolsterC. A. Lindstrom Book-holderS. W. Sparger Borneol and borneol esters from pinene,	((
Making. G. Austerwell Bottle. T. M. Daniels Bottle-closure. H. B. Taylor Bottle, Non-rehllahle. H. J. Rosenberg	Į
Bottle, Non-refillableR. Bova Bottle, Non-refillableR. Wright Bottles, Machine for affixing closures to P. W. Hodgkinson	I
Box machine, Wire-hound	I
Box making and sanding machine	I
Bottle. T. M. Daniels Bottle-closure. H. B. Taylor Bottle, Non-refillahle. H. J. Rosenberg Bottle, Non-refillable. R. Boyn Bottle, Non-refillable. R. Boyn Bottle, Non-refillable. R. Wright Bottles, Machine for affixing closures to. P. W. Hodgkinson Box machine, Wire-hound- J. H. Greenstreet Box-machines, Glue-applying apparatus for C. F. Jenkins Box making and sanding machine. C. H. Palmer et al. Box-making machine. C. H. Palmer et al. Box-make mechanism. D. T. Fisher Brake mechanism, Automatic. J. F. Reynolds Brick-kilu. J. Q. Bennett et al. Brooch-pin tongues, Gnard for H. Grasmuk	I
Brooch-pin tongues, Gnard for	1 1 1
Brooch-pin tongues, Gnard for H. Grasmuk Broom-handle. G. W. Irick et al. Brnsh. A. D. Cardinet Brush and mop holder. A. Fischer Brush-filling machine. O. B. Hoover et al. Bursh-holder. L. H. Sparks Brush Tooth. L. L. Funk Bucket, Bottom-dumping (2 pats.) G. L. Stuebner Buckle. G. H. Perrine Buckle. R. A. Moore Buckle. Garment. M. Rubin Building-block, Sectional F. Burchartz Building-corner, Metal T. F. Jameson Bundling-machine T. Hawley Cables, Fastening for the ends of wire. L. Marschand, Jr.	I
Bucket, Bottom-dumping (2 pats.) G. L. Stuebner Buckle	I
Buckle, Garment	I
Cables, Fastening for the ends of wire L. Marschand, Jr. Calciner, drier, and roaster, Continuous-	I
Calciner, drier, and roaster, Continuous-process rotary plaster W. A. Bishop Cau-opener]
Car, Drying- J. W. Bailey Car, Dump- S. Otis Car-floor construction, Freight. W. P. Bettendorf]
Car-floor construction, Freight Car, High-side gondolaS. Otis Car, Log and lumberC. H. Ruggles Car-roofH. J. Small et al. Car-stepA. A. Taylor Car-stepJ. D. Collier Car, StreetJ. Wenston Car-wheel equipmentJ. Stuart Cars after being dumped, Means for automatically restoringJ. L. Blaker Cars, Mileage coasting-register for electric P. Lindemann et al. CarbureterJ. Harris]
Car-step. J. D. Collier Car, Street- J. Wenston Car-wheel equipment. J. Stuart]
matically restoring J. L. Blaker Cars, Mileage coasting-register for electric]
Carbureter. J. Harris Carcass-splitting machine. H. Vorsanger Card appliance. H. Wyndham Card-cutting machine. J. J. Kuecht Carriage-propelling means. W. D. Scal Carrier. M. L. Emerson Cartridge-loading machine, Hunting. S. Berti	1
Carriage-propelling meansW. P. Seal CarrierM. L. Emerson Cartridge-loading machine, Hunting S. Bertl]
Cartridge-loading machine, Hunting]
Cementer, RotaryH. I. Illingworth Centering deviceM. H. Oneal Chalk-line holderC. P. Hoover Channels, Baking mechanism for cleaning]
Chalk-line holder. C. P. Hoover Channels, Raking mechanism for cleaning the gratings of water- B. J. Sloan Check-bit. C. H. Burch Chimney-holder. T. M. Elkins Cigar show-case A. Lange Cigarette-box. T. H. Thorne Circuit-closer, Thermal. F. C. Guptill Circuit-controlling apparatus. J. Sachs Cistern. B. L. Mills Cistern or tank. A. B. Crawford Clamping apparatus. J. R. Thomas Clamping-jacket. F. J. Becker Cleaning and sterilizing apparatus.	1
Cigarette-boxT. H. Thorne Circuit-closer, ThermalF. C. Guptill Circuit-controlling apparatusJ. Sachs]
Cistern or tank. A. B. Crawford Clamping apparatus. J. R. Thomas Clamping-jacket. F. J. Becker]
Cleaning and sterilizing apparatus J. J. Heathcote Cleaning-machine, Suction D. P. Moore et al.	
Cleaning and sternizing apparatus]
Clastel and action and action of the Courses	
Coal-dust feeder. J. W. Zell Cock for liquid-containers, Spring-controlled draw-off. J. Kreibich Coherer. W. E. D. Stokes, Jr. Coin-controlled lock. W. S. Farnsworth Coin-receptacle. S. Florsheim Coin sorting or distributing device or apparatus.	j
Tittis	1
Coking and gas-generating oven H. Koppers Collar. Horse	I
Concrete building-work, Apparatus for forming. L. Callahan Condenser-feed lubricator. C. C. Wakefield]
Cone-tuhe]
ance for gravityG. H. C. Williams Conveyer-troughL. S. Whiting et al. CookerW. G. Gagne Copy-holderB. F. Peetz et al. Cores, Anchor for moldingH. C. Maul	1
Corr-binder loader	((((
Cotton-distributer F. Phelps Cotton-gin feeders, Driving mechanism for F. Phelps Crane or derrick A. P. Lundin Cranking device, Safety G. M. Fisher et al.	000
Crank or derrick. Cranking device, Safety. G. M. Fisher et al. Crate. L. E. Tate Crate, Shipping. C. A. Walton Creeper. N. Triantafilu Cuff, forming press. A. L. Johes	
Cuff-forming pressA. L. Jobes Cultivator attachmentG. W. Parmer et al.	(

Culvert-mold	
Cutter-bar R. S. aud H. C. Graham Cutter-bar H. Smith et al. Dairy-can C. Madsen et al. Dam F. E. Roff Dash-pot huffer device, Fluid- F. C. Furlow Determing devices	•
Diaphram-face-plate attachment V. Lahadie Disintegrator J. Mohs Disor gastration Shoot motal	
Door-jamb, MetallieC. Dahlstrom Dough-molding machineP. B. Streich Draft deviceH. R. Young	
Draft-equalizerM. S. Glover Drafner, DishS. Boss Drawer bill-holding attachment, Money P. J. Menighan	,
Drinking-fountainP. A. Tornwall et al. Driving-gear mechanismR. Stuhlmacher Drums, Liner for centrifugalO. G. Aberg Drying apparatusW. M. Schwartz	
Drying-machine	
Dye, Vat (2 pats.)	
Dyestnif, Vat (2 pats.)W. Bauer et al. Eaves-trough haugerJ. C. Timm Electric batteryC. Jaeger Electric currents, Syuchronizing-interrupter	
for E. Bachelet Electric furnace C. A. Keller Electric machine, Commutator-type dyna- mo- W. H. Singer	
Electric switch, Clock-operated	
Electrical apparatus, Construction of constor	
Elevator-retarding device, Plunger	
Embalming instrumentW. H. Turner. Jr. Engine-cranking deviceC. V. Pollock Engine-starting mechanism	
eombustion	
Explosive and other engine T. R. Moore Explosive engine M. B. Morgan Explosive joke-lox C. J. Peterson	
Extensible table. B. II. Carnovsky Extension-table. J. K. Rishel Fabric, Apparatus for treating adhesive- coated. A. Thoma Collegeith	
Fastening device	
Elevator system, Alternating-current	
Fertilizers, Manufacturing intrate	
Film-pack and adapter therefor J. Schmnek Filter, Rain-water. L. W. French Fire-alarm, Antomatic. J. W. Griffith Fire-alarm, Automatic. J. H. Bruhw, Jr.	
Fire apparatus	
Fire apparatus B. B. Briggs Firearm E. H. Searle Firearm-sights, Hood for W. O. French Fishing-tool P. E. Lower Flask-guide H. J. Schanmleffel Flat-iron heater M. E. Johnson Floor-scraper W. Holden Fluid-meter E. P. Coleman Fluids, Apparatus for registering the flow of A. J. Diescher	
Flume (3 pats.)	
Flushing apparatus, Water-closet R. Stickdorn Flushing-tank. S. E. Cook Flushing-tank. R. G. Elliott Fly-trap. S. F. Rockley Flying-machine. S. F. Rockley Flying-machine. K. Hipssich Flying-machine. H. Witchell	
Flying-machine. K. Hipssich Flying-machine. H. Mitchell Flying-machine. M. D. Compton Foot-ball. J. Gamble Fortune-telling die. H. M. Walsh	
Fruit-processing apparatus H. G. Coykendall Funnel. S. H. Michel. Furnace. R. E. Ashley Furnace-charging apparatus, Blast- J. Kennedy	
Fuse and line-disconnecting switch, Safety- 	
Game apparatus. W. W. Duncan Game apparatus J. Fleming Game-board. W. L. Deming Garment-fitter. I. M. Bond Garter. Man's. W. H. Johnson	
Gas container closureR. H. Campbell Gas generator, AcetyleneW. J. Wyatt Gas Iron Atmospheric. H. A. Koenig	
Gas-lighting apparatusR. M. Dixon Gas plant and engine, SuctionT. H. aud T. H. Oswald, Jr. Gas-producers, Water-regulator for suction E. Lundgren	
Gas-regulator	

Gas-producers, Working updraft
Gas-producers, Working updraft J. Fielding Gas-regulator, AutomaticW. A. Baehr Gases, Device for taking moisture or other vapors out ofH. W. Arnold Gata
Gases, Device for taking moisture or other vapors out of H. W. Arnold Gate
draulic trausmission——————————————————————————————————
Glass flower-blocks, Manufacturing
Glass-teeming apparatus J. W. Cruikshank Glassware, Mannfacturing E. A. Gillinder
Gioves, Cleaning kid or leather
Gravel or ore screen. F. J. Hoyt Grinding and polishing wheel. F. J. Tone Gun, Differential-recoil. K. Haussner
Hammer attachmentM. M. Mallory Hammer, PueumaticC. B. French Hammocks and the like, Support for
Harness attachment. D. L. and W. M. Kelso Harrow. R. W. Crossman
Harness attachment, D. L. and W. M. Kelso Harrow. R. W. Crossman Harrow. E. L. Hawkins Harrow-tooth. J. Whipps Harveser, Beet- (reissne). E. E. Shaw Harvester, Corn. R. P. Smith Harvester, Corn. R. P. Smith Harvester loader, Corn. F. A. R. H. C., and O. L. Fiebach Harvesting and boll-gathering machine, Cotton. O. C. Houghton Hat-pin, Lady's. M. Conigrave Hat-pin safety attachment, C. L. Schmidt Hat-press, Power. C. A. Bingaman Hat-trimming stand. J. H. Steick Hay-loader. H. T. Shipley et al. Headlight, Dirigible. D. L. Harrell Headlight, Dirigible. D. L. Harrell Headlight for cars, Automatically-controlled W. S. Waltz Heater and boiler, Conrbined, P. A. Deasy Hinge and conveyer, Magazine-
Harvester loader, Corn
Hat-pin, Lady'sM. Conigrave Hat-pin safety attachment. C. L. Schmidt Hat-press, PowerC. A. Bingaman
Hat-trimming standJ. H. Steick Hay-loaderH. T. Shipley et al. Headlight, DirigibleD. L. Harrell Headlight for cars, Automatically-controlled
Heater and boiler, Conrbined, P. A. Deasy Hinge and conveyer, Magazine-
Hinge, Spring- A. Dice Horse-releaser C. Sowards
vice. Apparatus for feedingO. HanselHorseshoe
Hose shut-off
vice. Apparatns for feeding. O. Hansel. Horseshoe. A. Roth, Jr. Hose nipple attachment, Rubber
for G. M. Curtis Indicator E. A. Taricn et al. Indicator D. Crelman Induction-coil R. Varley
Insect-collecting machineA. Meek Insulating-capJ. C. Phelps Internal-combustion engine
Internal-combustion motorK. Fabel Iron manufactureR. B. Carnahau, Jr. Irrigation systemC. H. von Hoheustein
Kiln
Knitted fabrie. S. Davis Knitted fabrie. R. W. Scott Knitting-machine. E. Paquette Knitting machine, Circulari E. Paquette
Lace-braiding machineH. J. Quambusch LampF. Longstaff Lamp-cord adjuster
Lamp, GasT. J. Little, Jr. Lamp-shadeW. Person et al. Lamp socket, Iucandescent
Lamp, Vacuum-tubeD. M. Moore Lamps, Flue construction for signal R. E. Bruckner
Latch, Window
Light-fixtureM. F. Finkelstein Liquid-dispensing deviceJ. H. Champ Liquids, Condensing or evaporating
Lamps, Flue construction for signal
Loom
Mail-bag eatcher J. D. Leonard Mail-chute L. Ehrlich Mail-crane E. A. Robinson Mail-delivery device, Rural- G. V. Kinney Mail-delivery device, Rural- (2 pats.)
Mail-delivery device, Rural- (2 pats.) G. V. Kinney Market-quotation indicator W. J. Chapman et al.
Market-quotation indicator
Mattress-frame
Meat and vegetable cutter. A. Haas Meat-cake-molding utensil L. P. Beaulieu et al. Megaphone. F. B. Cather Metal-founders' flask. W. J. Keep Metal sawing and trimming machine H. G. Miller
H. G. Miller

Metallic sands or concentrates, Reduction plant for treatment of G. F. Rendail
Metallic sands or concentrates, Reduction plant for treatment of G. F. Rendail Meter-box top T. W. Morris Milk-cooler M. M. Preeman Miunow-trap, Transparent knockdown J. A. Smith
Motion, Release and let-back. F. Howard Motive power, Method and apparatus for generating. O. P. Ostergren Motor-control system. W. Siebenmorgen et al.
Motor-control system E. L. Gale, Sr.
Motor-cycle drive mechanism E. G. Anderson Motor regulation, Electrics A. F. Pieper Numberingshead W. H. Smith Nut, Lock M. P. McLaughlin Nut-lock G. W. Whiteman Nut-lock A. Rahn Nut-lock W. A. Whitney Nut-lapping machine C. F. Messinger Oil-burner A. Klein Oil-can E. H. Noble
Oil-can
Ores and the like, Refining and agglomerating. II. Dicke Orthodontia apparatus (2 pa(s.).
Oven and furnace door W. Young Overalls. A. Eloesser Pack-heating furnace. C. W. Bray Package-handling apparatus
Package-indicating machine W. Rose Package, Special R. G. Smith Panel construction W. J. Klemm Paper-feeding machines, Sheet-separator
Pack-heating furnace. C. W. Bray Package-handling apparatus W. E. Nickerson Package-indicating machine. W. Rose Package, Special. R. G. Smith Panel construction. W. J. Klemm Paper-feeding machines, Sheet-separator for. R. Hanan Paper-hanging machine. J. V. Phillips Paper receptacles, Coating. C. F. Jenkins Paper, Wall-R. B. Griffin Party-line ringing-key. R. H. Manson Pasteurizer, Regenerative. J. Willmann Pasteurizing-machine. E. J. Spink et al. Pattern-plate. J. Bayer Percolator-pot and stand. E. A. Gutermann Pianos and similar musical instruments,
Preumatic action forA. J. Hobart Picture-frame and portfolio, Combined S. Soletcki Picture, proching, Maring, S. S. Giordana
Picture screeus, Manufacturing moving P J. Haulon Pin-guard C. H. Alleu Pin safety-catch E. Morehouse Pipe C. H. Odeubaugh et al.
Pipe. C. II. Odeubaugh et al. Pipe-cleaner. W. Colina et al. Pipe-mold. J. C. Knapp. Jr. Pipe-testing plug. Soil. B. B. Kinkade Pipe-wreuch, Chain. G. Amborn Piston-drum for rotary engines.
Pipe. C. H. Odenbaugh et al. Pipe-cleaner W. Colina et al. Pipe-mold J. C. Knapp, Jr. Pipe-testing plug, Soil B. B. Kinkade Pipe-wreuch, Chain G. Amborn Piston-drum for rotary engines R. Eisermaum Pitman connection L. M. Jones Plant and flower pot G. M. King Plant-setting machine S. T. Davis Planter X. N. Libner Planter and fertilizer-distributer F. H. Weaver
Planter and fertilizer-distributer. Platform, Dumping- E. L. Rector Plotter. L. M. Carmical Plow G. Wenger Plow G. Wenger Plow C. D. Smith Plow riding attachment J. S. White Plowing-machine Planter
Plow riding attachmentJ. S. White Plowing-muchineP. E. Holt Plug. AttachmentT. A. C. Both Plumbing system and fittings therefor G. Beckway
Pneumatic cleaning apparatusE. L. B. Zimmer Pneumatic-despatch systems, Receiving ap-
Pocket-knife, Take-down C. H. White et al. Poke, Animal. C. C. Grimes Pole. F. M. Wilcox Pole, Vehicle- C. B. Schleieher Portralle heater F. B. Ellis et al.
Post-eard rack. W. O. Kaiser et al Post or bar. H. W. Yost Potato-digger. J. Morean Power-arrester J. W. Novak
Post-eard rack. W. O. Kaiser et al Post or bar
Printing press, Multicolor- W. J. Wickers Prop. J. Monnier Pump. W. W. W. Wilder
Pump, Diaphragin
Quilling-machine
Rail-joint W. P. and S. G. Thomson Rail-joint W. Barnett Rail-joint
Rail-joint lock, Automatic H. T. Hughes Rail-joints, Splice-bar for.
Rail-supporting tie, Track-, A. Williamson Railway-crossing J. H. Brumback Railway-gate, Automatic electric
Power-transmisting device. A. Sundh Printing-press cylinder-tripping mechanism R. Miehle Printing-press delivery mechanism W. S. Huson Printing press, Multicolor- W. J. Wickers Prop. J. Monnier Prump M. W. W. Wilder Prump, Diaphragm. L. C. McNeal, Pump-landle lock. C. Cornwall Pump-stand. P. A. Myers Pumps, Control-valve for water-jacketed Quilling-machine. G. Sipp Rail-fastener, Anticreeping Rail-fastening device. J. V. Bergen Rail-joint. W. P. and S. G. Thomson Rail-joint. W. Barnett Rail-joint and spike-protector. Combined. Rail-joint J. W. Beard Rail-joint, Splice-bar for. W. P. and S. G. Thomson Rail-spints, Splice-bar for. W. P. and S. G. Thomson Rail-spints, Splice-bar for. W. P. and S. G. Thomson Rail-sporting tie, Track- A. Williamson Rail-supporting tie, Track- A. Williamson Railway-crossing. J. H. Brumback Railway-rail joint. S. P. Sicard Railway-rail joint. S. P. Sicard Railway-rail joint. J. W. Rice Railway-rail joint. J. W. Rice Railway-rail joint. J. J. Holt Railway-rail joint. J. J. Holt Railway-rail joint. J. J. Holt Railway-rail joint. J. J. Reed Railway-tie and rail-fasener. J. J. Planett Railway-tie and rail-fasener. J. J. Planett Railway-tie, Metallie. J. H. Reed Razor-strop. G. E. Martin Razor-strop. G. E. Martin Recording mechanism. T. M. Foote
Razor-strop. G. E. Martin Razor-strop. M. Lee Receptacle, Self-closing L. C. Van Riper Recording mechanism T. M. Foote

324-24-24-24-24-24-24-24-24-24-24-24-24-2
Refrigerator-drain-pipe cleaner
Refuse-destructors, Apparatus for discharg-
ing dust-carts into the furnaces of J. Ochsuer
Rein-holder and whip-socket. C. I. Denner Resurfacing mechanism. I. C. Buckminster Road-roller. P. E. Holt
Road-scarifier. E. Wright Rolling-mills, Oiling-box for. J. Judd
Rolling tie-plates and the likeD. H. Lentz Rone-hitch
Ropes and the like, Apparatus for untwisting, breaking up, and teasing the fibers
Rosette
Rotary engineW. M. Hoffman Rotary engineH. 1. Call
Rotary engine
Rubber and the conting or facing of fabrics and the like with india-rubber Man-
Rubber and the coating or facing of fall- rics and the like with india-rubber, Man- nfacture of sheet indiaT. Gare Rubber footwearM. C. Clark Saddle, RidingL. P. Wellmann Salt of the optically-active laevo-o-dioxy- phenylethanolmethylaminF. Flaceher Sandragar or coval helts. Apparetus for
Saddle, RidingL. P. Wellmann Salt of the optically-active laevo-o-dioxy-
Samuration or Samu-peres, Apparates for
cleaning H. Heady
R. Hoel Sash-lock. F. L. Wissman Sash lock, Swing- M. Petrovics Sash, Metallic. A. W. L. Hartbauer
Sash lock, Swing- A. W. L. Hartbauer
Sawmill-carriage wheel-guard and track- cleamer. T. Carberry et al. Scaffolding-clamb. L. Scotellaro
Screed and nailing-strip, Combined
Screen frames Form for nuking Windows.
Seal, Car
Sealing deviceF. J. Macklin et al. Sealing-head for bottle-capping machines
Seed or the like, Roll for delinting cotton-
Self-heating iron. C. L. V. Mundhenk et al.
Seal, Car., P. M. Betz Sealing apparatus, Hermetie-, W. A. Lorenz Sealing device, F. J. Macklin et al. Sealing-head for bottle-capping machines., E. P. Wetmore Seed or the like, Roll for delinting cottom- P. White Self-heating iron, C. L. V. Mundhenk et al. Separating apparatus, Particle. D. K. Swartwont Sewing-machine for fancy stitch and embroidery work. R. Brown Sewing-machine shuttle (2 pats.). H. A. Bates
Sewing-machine for fancy stitch and embroidery work R. Brown
Sewing-machine shuttle (2 pats.)
Shade and reflector. Adjustable light
L. H. Spivey Shade bracket, WindowL. S. Simpson Shafting and pulleys, Device for removing
shaper feed mechanismG. K. Atkinson
Shipboard, Self-leveling cot, bank, couch,
Shock-absorbing device. L. A. Peckham Shock-loader Grain. J. P. Hamann
Shafting and pulleys, Device for removing keys from J. Butsch Shaper feed mechanism G. K. Atkinson Share, Slip- L. S. Lewis Shipboard, Self-leveling cot, bunk, couch, etc., for use on A. L. Wertheim Shock-absorbing device L. A. Peckham Shock loader, Grain- J. P. Hamanu Shock-absorbing device L. A. Peckham Shock loader, Grain- J. P. Hamanu Shoc-calk C. W. Kaighin Shuttle, Weaver's F. Blumer-Streiff Sign L. G. Solenberger Signal-lock D. J. Kayanagh, et al. Skin-carroting machine L. Beaulieu Skirt-pattern J. Blackburn
SignL. G. Solenberger Signal-lockD. J. Kayanagh, et al.
Skin-earroting machineL. Beaulieu Skirt-patternl. Blackburn Sparking plugs, Junction-box for J. Dubail
Spring-gnide
Square, Stair-builder'sT. J. Smith Stamp-affixing machine, Postage
Stamp, DatingA. D. Joslin
Stamp machine, HandF. Wosinski Steam-boilerM. W. Sewall
Stamp, Dating
Steering device for vehicles, airships, aero-
Stenciling-machine
Steering device for vehicles, airships, aeroplanes, submarines, etc J. Wetterwald Stenciling-machine B. C. Stickney Stereotype-plate casting and finishing mechanism H. A. W. Wood Stereotype-printing-plate-casting apparatus H. A. W. Wood Stilt H. C. Heffner Stirrup J. H. Harper Stool, Milking F. Michalsky Stop. Antomatic limit F. C. Furlow Store-fixture F. S. Nelson Stove, Camp J. P. Jacobs Stove, Cook J. E. Chambers Stove, Cooking J. F. Heister Strain-plate and gny-support, Combined.
StiltH. C. Heffner
Stirrup. J. H. Harper Stool, Milking F. Michalsky
Stop, Automatic limitF. C. Furlow Store-fixtureF. S. Nelson
Stove, Camp- J. P. Jacobs Stove, Cook- J. E. Chambers
Strain-plate and gny-support, Combined J. W. Stamps
Stove, Cooking
Street-register. E. E. Hunstable Stropping-machine. II. Clauss
Stud and socket fastenerA. E. England Suspender-end cast-offE. H. Humphrey
Suspenders. M. Cohen Swab-holder. B. Steinert
Switch-operating deviceL. J. Limpert Switch-operating deviceL. O. Harbaugh
Syringe, AspiratingC. Bevill
Suspender-end cast-off. E. H. Humbrey Suspenders. M. Cohen Swab-holder. B. Steinert Switch-operating device. L. T. Limpert Switch-operating device. L. O. Harbaugh Switch-rod. T. O'Brien Syringe, Aspirating C. Bevill Tag-machine. C. F. Smith Tapping-machine. O. A. Smith Telegraph apparatus, Cable I. Kitsee
C W McDonald
Telegraphy, Transmitting apparatus for wireless. P. O. Pedersen Telemotor (2 pats.). R. Janney Telephone-signal. C. L. Chisholm Telephone system, Selective lock-out.
Telephone-signal
Terephone system, Selective lock-out F. W. Adsit
Thermostat. H. Y. Norwood Thread-protector. P. J. Shrum
Telephone system, Selective lock-out. F. W. Adsit Textile materials, Treating R. Weiss Thermostat H. Y. Norwood Thread-protector P. J. Shrum Threads or films, as also artificial horse- hair, Preparing artificial F. Lelmer Thresher feeder attachment F. II. Mielke Tiles and the like, Machine for molding R. H. Fair
Thresher feeder attachmentF. H. Mielke Tiles and the like, Machine for molding
R. H. Fair

Ticket, Coupon passengerR. D. Smith Tipping vessel with traveling carriage, Self-
Tipping vessel with traveling carriage, Self-acting. W. Thele Tire-armor. H. M. Ramsay et al. Tire, Puncture-proof (2 pats.). T. M. Eynon Tire-set and spoke-clamp. J. Powers Tire shield, Vehicle-t. J. E. Joslen
Tire-set and spoke-clampJ. Powers Tire shield, Vehicle-:J. E. Joslen
Tonacco stripping and booking machine
Tool. J. R. Morris Tool, Combination- F. Hendrickson Tool, Combination- J. H. Stoddard Track-sanding device F. D. Bowen et al. Traction-engine A. B. Howard
Track-sanding deviceF. D. Bowen et al. Traction-engineA. B. Howard
Transom-lock. R. Gold Transplanting machine, Tree- A. Hill Transportation system for vehicles and their cargoes J. E. Falvey Trap. W. H. Kennedy Trap. A. P. Lambert Trap. H. Scott Trap. J. L. Whitney Trap. J. L. Whitney Trestle G. Marsh
their cargoes. D. E. Falvey Trap. W. H. Kennedy
Trap. J. L. Whitney
Trestle G. Marsh Trolley F. Stone
Trestle. G. Marsh Trolley. F. Stone Trolley-head A. Shaver Truck. Car. C. A. Lincoln Truck, Car. J. Sullivan Tull-cover fastener. H. Pletsch
Tub-cover fastener
Turbine H. F. Schmidt
Turbine, Elastic-fluid (2 pats), .C. G. Curtis Tying and tuffing machine, S. A. Miller
Umbrella R. H. Rouey
Underreamer. E. C. Voltz Upsetting-press J. Johnson Vacantagement J. E. Shoo
Vacuum eleaning-tool J. S. Thurman Valve, Balanced B. M. Aslakson
Valve for hydraulic elevators, Automatic stop- I. H. Venn Valve-geoging G H Jones
Tub-cover fastener. H. Pletsch Tubing and casing elevator. A. G. Heggem Tunneling and shaft-boring machine. F. M. Her Turbine. H. F. Schmidt Turbine. Elastic-fluid (2 pats). C. G. Curtis Tying and tufting machine. S. A. Miller Type-writing machine. Electric. A. T. MacCoy Umbrella. R. H. Roney Underreamer. E. C. Voltz Typestting-press. J. Johnson Vacuum-cleaner. J. F. Shea Vacuum-cleaner. J. F. Shea Vacuum-cleaner. J. S. Thurman Valve, Balanced. B. M. Aslakson Valve for hydraulic elevators. Automatic stop- J. H. Venn Valve-gearing. G. H. Jones Valve mechanism for air-compressors. J. Astrom
Valve, Reducing- J. A., Jr., and D. A. Graham Valve, Regulating- E. C. Sherman
Valve, Reducing
Vanadmin from its ores, Extracting
Vaults, Molding-bars for . J. G. Giesting
Vehicle-wheel, Antiskidding. M. Clark Vehicle wind-shield, Motor, E. T. Burrowes
Yending-machine, Automatic Moses
Ventilator and dust-arrester, Combined. A. C. Crenshaw
Vending machine, Stamp
Washing-machine gearing. N. Hardin Water-Glass guard. G. Mosei
Water-sterilizing apparatus
Water-trap. J. Jox Water-tube boiler. M. W. Sewall Water-tube boiler, myching
Weighing apparatus. II. B. Osgood
Welding-machine, Automatic electric.
Well pulling and cleaning machineO. D. Kraft et al
Wheel-driving mechanism Bereing Window-ventilator
Water-heater, Electric. A. Albert Water-sterilizing apparatus. C. D. Meeker, et al. Water-trap. J. Joy Water-trube boiler. M. W. Sewall Weighing and vending machine. Weighing apparatus. J. O. Fowler Weighing apparatus. JI. B. Osgood (Reissue, Welding-machine, Antomatic electric. A. F. Rietzel Well pulling and cleaning machine. O. D. Kraft et al Wheel-driving mechanism. J. Berends Window-ventilator. W. A. Scott, Jr. Wire-feeder. A. C. Mils Wire-stretcher. W. M. Lottridge Wire-tighening device. J. C. McLear
Issued March 14, 1911.

MECHANICAL PATENTS.

MECHANICAL PATENTS.
Acetylene, Dissociating, J. M. Morchead Acoustical instrument
A. Goldstein Album, Photograph. C. W. Crogan Alloys of titanium with other metals of the Fike, Producing. A. J. Rossi Amalgamator. F. J. Hoyt Ammunition-conveyer. G. C. Plummer Amnsement of the public, Apparatus for G. Young
Animal-trap. H. J. Hagge Animal-trap. S. McDonald. Animal-trap. A. A. Smith Asparagus-harvesting tool. C. R. West Antomobile door opening and closing at- tachment. S. J. Way Automobile safety-fender. I. Ksiazek Antomotor Turbine-driven S. Z. de Forranti
Awning

Pol essa Disapposing I Holmos	Cornett
Bed or couch W. J. Grotenbuis	Core-sti
Bed case, DisappearingL. Holmes Bed or couchW. J. Grotenhuis Bed-spring. CornerL. C. Lewis	Corset.
Billiard-table cushionJ. S. Burroughes Binder, Loose-leafH. B. Bristol	Cotton-
Binder, Loose-leat	Cotton- chine
Binder, Loose-leaf, A. Wagniere inder, Loose-leaf, J. L. McMillan	Couplin Couplin
Binder, Loose-leaf. J. C. Dawson et al. Binder, Loose-leaf. J. F. Dixon Blast-furnace. F. J. Zippler Block-machine scraper. J. Grogg	
Binder, Loose-leaf,J. F. Dixon	Cover
Blast-furnaceF. J. Zippler	Cow-tai
Blowing-machine or compressor	- Crank-l - Crate,
G. B. Petsche	Crutch.
Boat-discharging mechanism	Cultiva
W. W. Robiuson	Cultiva
Boat-hull and ballast means therefor	- Cultiva
Rolf-lock W. A. Scott	- Curren - Dam - c
Bolt-making mechanismF. F. Deeds	Dampe
Book cover and holder, Note. R. P. Shapro	Dambe
Bolt-lock. W. A. Scott Bolt-making mechanism. F. F. Deeds Book cover and holder, Note, R. P. Shapro Boring and turning machine. A. F. Nathan	Defloce
	Deliydi
Bottle-capping machineH. E. Marshall Bottle crowns or caps. Machine for mann-	Dental
Bottle crowns or caps, Machine for mann-	Die-sto
racturing	Dipper
Bottle filing and stoppering machine	Display
Bottle holder, Nursing- M. D. Deckle	Display
Bottle, Non-refillable,, F. A. Stephenson	Display
Bottle, Non-refillableJ. W. Collins	Display
Bottle, Two-partE. N. Breitung	Door a Door c
Brake-menting machine W W Irwin	1900r C
Breast-evacuatorM. F. Milligan	Door-fa
Bottle filing and stoppering machine Bottle holder, NursingM. D. Deckle Bottle, Non-refillableF. A. Stephenson Bottle, Non-refillableJ. W. Collins Bottle, Two-partE. N. Breitung Bottle, Non-refillableL. J. Loeffelman Brake-operating machineW. W. Irwin Breast-evacuatorM. F. Milligan Brick-makingmachineW. W. Irwin Bridge-score, PocketH. W. Bennet BrushJ. F. Bowditch Brush, FountainL. J. Mahler	Door,
Bridge-score, PocketH. W. Bennet	- Drain-1
Brush, FountainJ. F. Bowditch Brush, FountainL. J. Mahler	- Drawii - Macl
Buggy-wrench	Drinki
Buggy-wrench. M. A. Johnson Building-blocks, Making hollow	
Brimping-post F. Burchartz Brimping-post A. E. Schultz	D#rinki:
Emilipug-postA. E. Schultz	Drinkii
Burglar alarm. L. S. Bander Button and button loop clasp, C. W. Stimson	Drinki
Button-holderA. W. Cushman	Dye,
Button and button loop clasp.C. W. Stimson Button-holder. A. W. Cushman Entfon-hook. J. Johnson Cabinet, Seed-testing. B. H. and W. C. Adams Cabinet, Sleepings. A. Berchem Cabinet, Vendings. M. R. Maher Calenlating-machines, &c., Key-bar-locking mechanism for. W. W. Hopkins Can-heads, Machine for applying adhesives to (2 pats.) P. Krnse Can-marking machine. F. P. Ryder Candy forming and cutting machine. S. Vessot et al.	
Cabinet, Seed-testing	Electri
Cabinot Slooping A Porchom	Electri
Cabinet, Vending	Electri
Calculating-machines, &c., Key-bar-locking	Electri
mechanism for	Electri
Can-heads, Machine for applying adhesives	Electri
Can-marking machine F P Ryder	– Electri – Electri
Cardy forming and cutting machine	Electri
Car and apartment heating and ventilating	Electri
Car and apartment heating and ventilating	TUL
system. M. McGeery Car-axles, Means for driving generators from. W. I. Thompson Car door, Grain- J. M. Rush Car-door lock. T. H. Watts Car-door-notor convoller. J. F. McElroy Car fooder Street	– Electro Elevati
from W I Thompson	
Car door, GrainJ. M. Rush	Elevate
Car-door lock	Elevate
Car-door lock	
Car fender, StreetJ. J. Kelly	Engine
Car heating and ventilating system	bust
M McGeery	Engine
Car-partition, AdjustableJ. Dixey Car, Railway freightJ. D. Hern et al.	Engine
Cur switch Street. I. Z. Preston	Engine
Car switch, Street L. Z. Preston Carbureter. B. lyor	Expans
Carbureter	Explos
Carbureter for gas and gasolene engines	Eyegla
Card holder Playing C Wilder	Fare-re Feed-n
Card-punching machineP. Matthijssen	Feed-w
CasterII. P. Eilers	Feed-w
Card holder, Playing	Fence-
Chain, Hitching	Fertili: Fert ⁱ li:
Chair, platform, and receptacle, Combined.	Fibron
N. L. Carney	
Change-mat	Fifth-v
t noconice, pascures, sugar, and the like,	Filame Meta
Mold for	Filame
ChuckE. A. Clarke	Filing-
Cigar-holder	Fillet-
Clamping-tool R. E. Jack	Filter Filter,
ClockV. E. Dimeanson	Finish.
Clock, Watchman'sF, Hardinage	Fire-po
Cloth-corrying machine S Hardy	Fish-h Floral
Clamping-tool. R. E. Jack Clock. V. E. Duneanson Clock, Watchman's. F. Hardinage Closet bend or connection. F. W. Carlson Cloth-carrying machine. S. Hardy Clothes-drier. M. Herscovitz Clothes-drier. W. L. Cummer	
Clothes-drier	Fly-tra
Clothes-drier. W. L. Cummer Clothes-line adjuster. D. W. Rantine Clothes-line support. B. F. Hiatt	Fly-wh
Clothes-rack J. L. Wilson	Food 1
Clutch	\mathbf{Food}
Clutch mechanism, Friction-G. A. Schacht	
Clothes-rack. J. L. Wilson Clutch mechanism, Friction-G. A. Schacht Clutch mechanism, Hydraulic feed S. H. Keefer Cock, Ball	Foot for
Cook Pall- T W Ryan	Footw
Coffee-urn	1.000.11
Coin-handling apparatusA. J. Nott	Frame
Collar attachment	Fruit-l Fruit-c
Comb Share G. Grossenb	Fruit-
Comb-cleanerF. L. Vordemfelde	Finne
Combing-machine, Circle	Furna
Comparating device I. E. Paders	Firmac
Coffee-urn. II. R. Hansen Coin-handling apparatus. A. J. Nott Collar attachment. M. G. Polk Collar, Double shirt- C. Hyatt-Wolf Comb- Comb-cleaner. F. L. Vordemfelde Combing-machine, Circle. J. H. Whitehead et al. Compensating device. J. F. Raders Compressor, Rotavy. A. C. Roessler Concrete column. J. A. McKee Concrete-construction mold. H. C. Seipp Concrete construction, Reinforced.	Furna Fuse,
Concrete columnJ. A. McKee	Gage-1
Concrete-construction moldII. C. Seipp	Game.
Concrete construction, Reinforced	Game-
Concrete or like walls, Double-sided frame-	– Garme – Garme
work for the construction of P. Hedrich	Gas-al
work for the construction of P. Hedrich Condenser, AcidF. Moore et al. Conduit, VaporJ. E. Lockwood et al	Gas b
Conduit, VaporJ. E. Lockwood et al	Gas-bi
Confection-cone caseP. E. Waldvogel	mear cent
Connecting-rods, Forming steelL. H. Cappock	cent. Gas g
ConverterL. G. Woods	Gas g
Converter L. G. Woods Cooking utensil L. Nelson Coop, Brood- J. E. Fulfor	Gas in
Copper from parphyry ever and the lite	Gas-te Gear
Copper from porphyry ores and the like, Recovery of	Gear : vari
Cord. &c., Machinery for manufacturing or	Gearin
treating lengths ofT. Sloper Core-forming machine, SandL. M. Hennessy	Gearin
t oro rorming ingenino Sand-	— Gearin

Core-stripper. F. M. Kennedy et al. Cork puller M. L. M. Peek Corset J. E. Stronse Cotton-chopper. R. B. Miner Cotton-stalk stripping and breaking ma- chine J. L. Daniels et al Coupling and steering device. A. W. Hindman Cover attachment T. McCabe Cow-tail holder L. H. Bigelow Crank-hanger M. Schenek Crate, shipping R. and R. Muehr Crutch C. E. Kritsch Cultivator R. E. McNamara Cultivator R. H. Tinsman Cultivator J. W. Beckman Cultivator J. W. Beckman Cultivator J. W. Beckman Cultivator L. Gnynn Dam construction L. Jorgensen
Cotton-chopper
A. W. Hindman Cover attachment. T. McCabe Cow-tail holder. L. H. Bigelow Crank-hanger. M. Schenek
Crate, shipping R. and R. Muelur Crutch C. E. Kritsch Cultivator R. E. McNamara Cultivator S. H. Tinsman
Cultivator. J. W. Beckman Current-motor. L. Guynn Dam construction. L. Jorgensen Damner G. W. Forelssong
Damper
Dental impression-tray J. W. Greene Die-stock. W. H. Leaver Dipper-door. F. W. Thompson Display-device F. Woodgum
Dehydrating apparatus. F. T. Stare Dental impression-tray. J. W. Greene Die-stock. W. H. Leaver Dipper-door. F. W. Thompson Display-device E. Woodrum Display-rack for rocking-chairs. P. O. McIntyre Display-rack for trunks. C. A. Kuntzendorf Display-stand. T. P. Briody et al. Door apparatus. Safety. N. Girrens Door checks and closers, Door-stop for. W. K. Henry Door-fastener. H. Kappele Door, Grain- J. Oliver
Door apparatus. SafetyX. Girrens Door checks and closers, Door-stop for W. K. Henry Door-fastenerH. Kappele
Door, GrainJ. Oliver Drain-pipeC. W. Oshorne Drawing sharp edges on metallic bodies, Machine forC. O. Halling Drinking-cup-collecting apparatus
Drinking-cup-collecting apparatus
Drinking-straws, Device for dispensing G. Meredith Dye, Yellowish-, red vat P. Thomaschewski et al.
Liectric cut-out
Electric iron R. P. Moodie et al. Electric-light fixture J. S. Cuming Electric machine, Dynamo C. M. Page Electric machine, Dynamo J. Burke Electric switch H. Hull Electric switch C. Woods et al. Electric switch, Iron-clad V. Hope Electrical-circuit controller and alarm
Electric switchC. Woods et al. Electric switch, Iron-cladV. Hope Electrical-circuit controller and alarm
Elevator-doors Automatic actuator for
H. G. Peele.
bustion- O. Podhajsky Engines, Driving-gearing for traction- J. W. Shelburne Engines, Moistener for internal combustion
Elevator for ash-cans and the like
Fare-register, Automatic D. J. Toal Feed-mixer
Fence-tie. G. H. Coek Fertilizer-distributer. J. H. Mathews Fertilizer, Making. H. Coburn et al Fibrous materials. Machine for treating.
Fare-register, Automatic. D. J. Toal Feed-mixer. F. I. Derby Feed-water cleaner and heater. E. Efran Feed-water regulator. F. N. Connet Fence-tie. G. H. Coek Fertilizer-distributer. J. H. Mathews Fertilizer, Making. H. Coburn et al Fibrous materials, Machine for treating. C. T. Drake Fifth-wheel. W. B. Messink Filament for lucandescent electric lamps. Metallic. K. Farkas Filament, Variegated corn. H. D. Perky Filing-case, Adjustable. H. H. Sellers Filter and dispenser, liquid. A. Kenney Filter, Water. J. O. Schmitt Filter and dispenser, liquid. A. Kenney Filter, Water. J. M. Wilson Fire-pot. R. Rouse Fish-hook. J. Olson Floral and display refrigerator. Fly-trap. P. Lagodimos Ely-whool W. H. Heine
Filament, Variegated cornH. D. Perky Filing-case, AdjustableII. H. Sellers Fillet-entterJ. O. Schmitt Filter and dispenser, liquidA. Kenney
Filter, Water. J. Kneen Finish, Removing. J. M. Wilson Fire-pot. R. Rouse Eish-book J. Olson
Floral and display refrigerator. R. L. Tilghman Ply-trap. Plagodimos Fly-wheel. W. H. Heine
R. L. Tilghman Fly-trap. P. Lagodimos Fly-wheel. W. H. Heine Food from cactus, Making stock. J. H. Glazier Food from ccreals, Manufacture of II. D. Perky Foot wearing-apparel. Cushioning device for. J. S. Young Footwear, Stiffening the toes and heels of. E. Liebermann
Foot wearing-apparel. Cushioning device for
Frame construction, SideO. S. Pulliam Fruit-hagT. J. Jackson Fruit-hipperF. M. Bonta Fruit-nickerT. H. Heberling
Footwear, Stiffening the toes and heels of, E. Liebermann Frame construction, SideO. S. Pulliam Fruit-hagT. J. Jackson Frnit-clipperF. M. Bonta Fruit-pickerT. H. Heberling Fnnnel-signalJ. Q. Adams FurnaceC. Wegener FnrnaceH. Moor Furnace-archF. Girtanner Fuse, Self-adjustingJ. O. Holton. Jr. Gage-movementF. C. Blanchard et al. GameG. W. Bugbee
Fuse, Self-adjustingJ. O. Holton, Jr. Gage-movementF. C. Blanchard et al. GameG. W. Bugbee
Garment-carrier. S. Katz et al Garment-creaser. O. G. I. O'Heir Gas-alarm. A. B. Jacobs Gas burner. Artificial- J. Weintz
Gas-burners and like fittings, Supporting means for globes of inverted incandescent
Gage-movement. F. C. Blanchard et al. Game. G. W. Bugbee Game-recorder. A. C. Flusehman Garment-carrier. S. Katz et al Garment-creaser. O. G. I. O'Heir Gas-alarm. A. B. Jacobs Gas burner, Artificial- J. Weintz Gas-burners and like fittings, Supporting means for globes of inverted incandes- cent. A. Bray Gas generator, Acetylene- J. N. Tweedy Gas generator, Acetylene- L. F. Filloon Gas making. J. J. Nix Gas-tester. J. E. Carney Gear for power transmission, Hydraulic variable. A. Sundh Gearing. T. Coventry Gearing, Change-speed. C. Cotta Gearing, Friction transmission- G. R. Eaton
variable
G. R. Eaton

Gearing, Incased. E. M. Wheelock Gearing, Reversing. W. W. Henderson Gearing, Transmission. S. W. Blevins Glass-grinding disk. W. B. Mayo Glove attachment. G. A. Moss Glue boiler. C. E. Francis Governor, Engine- J. W. Sargeant Grass-trimmer. J. B. Sinderson Grater for culinary use. J. Kasarda Grinder-clamp. G. E. Kent Grinding machine, Hob. P. Catucci Gnm, Chewing- T. J. Lynch Harrow. A. and R. E. Schley Harrow. A. E. Naylor et al. Harrow, Rotary. C. B. McGee et al. Hat-pin fastener. C. Hierl Hat-pin gnard or protector. J. H. Mateer Hay-press. I. C. Terry Hay-press, Automatic. W. S. Parvin et al. Hay-rack. A. Kirsch Hay-rack. M. W. Shaw et al. Hemp-breaking machine. W. H. Atwood Hinge. R. L. Murdock Hitching device. J. E. Plato Hitching device. J. E. Plato Hitching device. J. K. Shero Hoe and rake, Combined. U. L. McKibbin Hoisting-engine, Pneumatic. J. S. Shields et al. Horse-holder. J. T. Wallis Horse-overshoe. C. A. Conover Horseshoe-calk. J. P. Van Wyck Hose-coupling. H. W. Thomas Hub, Wheel- M. C. Shea Hydrocarbon-burner. R. Hoffmau Ice-box. A. Génkle Ice-creeper. A. Scaramella Ice-freezing tank. J. H. Lewis Lakstand.
Gearing, TransmissionS. W. Blevius Glass-grinding diskW. B. Mayo
Glove attachment G. A. Moss Glue boiler C. E. Francis
Grass-trimmerJ. B. Sinderson Grater for cultivary useJ. Kasarda
Grinder-clampG. E. Kent Grinding machine, HobP. Catucci
Gum, ChewingT. J. Lynch HarrowA. and R. E. Schley
Harrow, RotaryC. B. McGee et al.
Hat-pin fastener
Hay-press, AutomaticW. S. Parvin et al.
Hay-tedder forkW. W. Shaw et al. Hemp-breaking machineW. II. Atwood
Hinge. R. L. Murdock Hitching device. J. B. Plato
Hitching deviceI. K. Shero Hoe and rake, CombinedII. L. McKibbin
Hoisting-engine, Pheumatic
Horse-overshoe, C. A. Conover Horseshoe, T. F. and D. F. Farley
Horseshoe-calk. J. P. Van Wyck Hose-coupling. H. W. Thomas
Hub, Wheel
Hydrocarbon-burner R. Hoffman
Ice-creeper
Inkstand. F. M. Ashey Inner tube. J. T. Lister
Insect-destroyerE. R. Lyon InsulatorD. H. Friend
Internal-combusion engineN. E. Davis Ironing-machineC. II. Mattice
Jack
Keg or barrel making machine.
Hydrocarpon-burner. R. Hohman Ice-box. A. Génkle Ice-creeper. A. Scaramella Ice-freezing tank. I. H. Lewis Inkstand. F. M. Ashey Inner tube. J. T. Lister Insect-destroyer. E. R. Lyon Insulator. D. H. Friend Internal-combusion engine. N. E. Davis Ironing-machine. C. H. Mattice Ironing-table. L. M. Durfee Jack. R. F. Schofield Jointers, Feed attachment for hand G. D. Trogdon Keg or barrel making machine. Keg or barrel making machine. Kettle-l'd. M. A. Lewis Kilns, Repairing the linings of roatary cement B. Morrison et al. Ladder, Extension C. C. Stevens Ladder, step A. S. Sou'e Lamp. H. J. Eber et al. Lamp. W. F. Persons Lamp burner, Incandescent-vapor-gas C. H. Smith Lamp, piano J. L. G. MacKenzie
Kilns, Repairing the linings of roatary cementB. Morrison et al.
Ladder, extension
Lamp
Lamp, pianoJ. G. MacKenzie
Lamp, piano
Land clearing and digging machine
Last-forms for upper-patterns for boots or shoes Blank forA. E. Whitelaw
Latch, Door
Leather-working machines, Sectional work- support forF. J. Perkins
Level
Life-saving device. A. L. Biedeaux Lifting-jack. J. B. Taylor
Light or other fixture, Adjustable
Link, RemovableE. J. Nixon Linoxyn and like products especially in-
manufacture, Manufacturing. A. Genthe
Liquid-fuel governorG. E. Witt LockL. R. Hibbard
Lamps, Gauze of miner's safety. Land clearing and digging machine. C A Reeves Last-forms for upper-patterns for boots or shoes, Blank for. A. E. Whitelaw Latch, Door. S. Skowronski Laundry-shaper. W. A. Zeidler Leather-working machines, Sectional work-support for. F. J. Perkins Lemon-squeezer. F. J. Perkins Lewel. M. E. Comstock Level. M. E. Comstock Level. O. L'heureux Life-saving device. A. L. Biedeaux Lifting-jack. J. B. Taylor Light or other fixture, Adjustable. W. L. Franks Link, Removable- E. J. Xixon Linoxyn and like products especially intended for utilization in the lonoleum manufacture, Manufacturing. A. Genthe Liquid cooler or receptacle. L. Zelazo Liquid-fuel governor. G. E. Witt Lock. L. R. Hibbard Lock. J. Ruday Lock. J. Buday Lock. J. Buday Lock. J. Ruday Lock J. C. Nichol Lobricating apparatus. W. R. McKeen, Jr. Lubricating apparatus. W. R. McKeen, Jr. Lubricating device. J. C. Nichol Lubricators, Operating device for forcefeed. E. Sundvall Magnetic separator. A. Dings Mail-box. A. K. Smith et al Mainspring-winder. F. R. Cunnningham Mantle fifter's tool. T. J. Litle, Jr. Mannre and garbage incinerator. M. Rusamante Measuring and marking instrument L. E. Tischop
Lock-bolt, Safety. H. T. Battin
Loom compensating head-gear.S. S. Jackson Loom, Weaving
Looms, Evener-frame for tuft-fabric J. A. Clark
Lubricating apparatus. W. R. McKeen, Jr. Lubricating device J. C. Nichol
Lubricator. E. L. Sembert, Sr. Lubricators, Operating device for force-food
Magnetic separator. A. Dings Mail-box A. K. Smith et al
Mainspring-winderF. R. Cunningham Mantle?fitter's toolT. J. Litle, Jr.
Manure and garbage incinerator
Mapping-machine, Automatic
Measuring and marking instrument J. E. Tischop
Measuring apparatusD. C. McCau Meat sawing or cutting machine
Ment-smoking deviceM. Heinemann Medical apparatus E. A. Babler
Merry-go-roundE. O. Spillman Metal-bending machineI. W. Hoover
Metals dense, Rendering porous
Mapping-machine, Automatic. M. Rusamante Measuring and marking instrument. J. E. Tischop Measuring apparatus. D. C. McCan Meat sawing or cutting machine. G. T. Francisco Meat-smoking device. M. Heinemann Medical apparatus. E. A. Babler Merry-go-round. Metal-bending machine. I. W. Hoover Metals deuse, Rendering porous. C. E. Sweet Metallic bodies, Treating. A. J. Rossi Mining apparatus, Placer- Miter-box. F. Paff Moistener, Envelop. K. Hjertquist Moisture-proofing powder materials.
Miter-box
Moisture-proofing powder materials
Molding clay articles, Apparatus for W. D. Frechs
Mosticing mechine Wood W D Heigh
Mortising machine, WoodW. B. Haigh Motors, Governing of fluild-operated
Moistener, Envelop

Mower grass-catcher, Lawu- Muffler, Woven tubular,, C. Seidman Music-leaf turner E. Seardaccione Music-sheet driver F. W. Draper Nnt, Lock C. T. Drake Nnt, Lock E. J. Murdock Nut-lock A. H. Stephens Nut-lock J. H. Light Oar-lock J. M. Smith Oil-can I. H. Kinch Optical reversing system C. Miller Opticians, Fitting-stand for J. Friedlander Ore-cooling apparatus J. B. Etherton Ore-crusher, Roller L. C. Trent Ore-roating furnace N. L. Heinze et al. Packing-case J. H. Killion Packing, Piston R. A. Fowden Pudlock D. E. Secont et al.
Muffler, Woven tubular,C. Seidman
Music-leaf furnerE. Scardaccione Music-sheet driverF. W. Draper
Nut, Lock
Nut-lockA. II. Stephens Nut-lockI. H. Light
Oar-lockJ. M. Smith Oil-canl. H. Kinch
Optical reversing systemC. Miller Opticians, Fitting-stand for J. Friedlander
Ore-cooling apparatusJ. B. Etherton Ore-crusher. Roller. J. C. Trent
Ore-roating furnaceN. L. Heinze et al.
Packing, PistonR. A. Fowden
Packing, Piston
Paper tox. Paper sheets, Machine for the manufacture of (2 pats.). F. E. Keyes Paving-black. Pen and pencil holder, Pocket. W. K. Fraser et al Pencil. C. W. Bowman Pencil-sharpener S. W. Ito Photographic negative. Photographic printing frame. Pianos, Shding panel for pneumatic. W. G. Betz Picture-film. F. B. Thompson Picture taking and exhibiting machine. Pipe and angle-cock holder, Combined train. S. H. Campbell Pipe-cutting machine, Antomatic. S. H. Campbell Pipes, Coupling. F. Sargent Pipes, Strainer-section for flexible metallic. L. J. Bordo Pivot-light. P. B. Donahoo
Paving-black. F. Galgano
Pencil-sharpener. S. W. Ito
Photographic-printing frameI. Foedish
Panos, Stiding panel for pneumatic
Picture-filmF. B. Thompson Picture taking and exhibiting machine
Pile-tubeJ. J. Pink Pile-tubeJ. McGranighan
Pipe and angle-cock holder, Combined trainS. II. Campbell
Pipe-cutting machine, Antomatic
Pipes, CouplingF. Sargent Pipes, Strainer-section for flexible metallic.
Pivot-lightP. B. Donahoo
PlaneE. A. Schade Planing-machine and attachment
Planing-machine and attachment
Plow attachment, Subsurface-packing
Plow for plants, WeedJ. E. Caldwell
Plow-motor guide wheel. E. M. Wheelock
Preumatics, Leak-regulator for primary
Post-moldG. W. Walliu
Pot for containing beverages. T. H. Russell Potato-cleaning apparatusB. J. Bronwer
Power-pressH. E. Derbyshire et al. PressF. H. Palmer et al.
Press
Printer's cabinet, RotaryT. F. Haller Priting color attachmentI. L. Wild
Post-mold
Probelling vesselsF. W. Schroeder PulleyII. J. Gilbert
Pulley
Pulp articles, Machine for making
Pulp-machine
Pulverizing-machineG. L. Pratt Pump. Centrifugal. F. H. Jackson
Pump governor, Steam airW. K. Rankin
Pumps, Automatic start and stop feed for
Rail-bondG. A. Hanson et al.
Rail-joint and rail-fastenerS. A. Briney
Rail-joint chair
Railway gate. Antomatic
Railway road bed and track construction.
Railway safety appliance, Cable
Railway safety deviceJ. T. Andrew
Railway-tie. Cement and steel. W. J. Horn
Railway tie-plateJ. W. Poster Razor-stropping deviceJ. A. Harrington
Reflector, Automobile-lampP. C. Avery RefrigeratorE. W. Shirk
Refrigerator
Refuse-destructorE. P. Rudder Rein-holderN. A. Archibald
Relay, Electrical
Resilient wheelE. S. Shauklin Respiratory apparatus for firemen or others.
Reversible handle
Roof
RosetteB. Nealis Rotary engineT. H. Lindley et al.
Rotary engine
Rubber heel for boots and shoes, DetachableC. H. Chapman
Resilient wheel. R. R. Hage Resilient wheel. E. S. Shauklin Respiratory apparatus for firemen or others. C. E. Chamin Reversible handle. W. Behm Roof. A. A. Smith Roof-bracket. W. Graffam Rosette. B. Nealis Rotary engine. T. H. Lindley et al. Rotary engine. W. L. Merrill Rotary steam-engine. R. I. Miller Rubber heel for boots and shoes, Detachable. C. H. Chapman Rubber waste, Recovering. E. E. A. G. Meyer Rule, Folding steel. R. J. Simpson
RulerI. C. Walk
Safety-can for hydrocarbon liquids
Safety-gate. J. Jones Sash-lock. E. A. Douat
Sash structureE. M. Baker Saw-bandle J. F. Wixon
Saw-set E. M. Conkling Scale recording and registering attachment.
Weighing
Seal, Car

Sent, construction, Spring, F. B. King Secondary or storage battery, B. Ford Separator
Seaf, construction, Spring F. B. King Secondary or storage battery. B. Ford Separator. B. Long Sewer-cleaner. J. M. Holaway Sewing-machine. F. T. Strobeck Sewing-machine attachment. B. S. Alsop Sewing-machine feeding mechanism. W. S. Brown Shampoo-cap. L. and K. G. Lee Sharpening device for slicing-machines. W. Wolff et al.
Sewing-machine accommend S. Alsop Sewing-machine feeding mechanism W. S. Brown Shannaga gap
Sharpening device for slieing-machines W. B. Wolff et al. Sheet-feeding machines, Stop-register for
II. C. La Batt
Sheil, Apparatus for feeding, R. H. Standish Shingling-gage
Shock-absorber. J. M. Jarkson Shock gatherer and loader. O. Johnson
Shoe-fastener. H. C. Johnson Shoe, Roefer's. H. E. Evrs
The Strategy of the Strategy o
Shoe, Wet-proof. J. A. Kelly
Signal apparatusR. Berrenberg Signal-lockH. Blank Signaling means, SelectiveI. F. Manny
Sink-strainer and waste-pipe cleaner, Com-
bined siphon. B. P. Smith Skate-holding clamp
Soup. A. Welter Sound-distributing horn. W. S. Cobb
Spark-arrisedS. D. and A. A. Sizer Speed of motor-cars and other vehicles, Apparatus for limiting theW. Roper
J. G. O'Kelly
Specdometer supporting and driving mechanism. J. H. and E. W. Bullard Spigot. J. P. Tarr Spinning, doubling and twisting machine. S. Z. de Ferranti Spinning, twisting and the like machines, Spindle support for. G. W. Farnham Springs wheel. G. H. Crawford Stanchion, Cattle. C. O. Braun Staple-feeding mechanism. O. S. Sturtevant Starch, Manufacture of. (2 pats.). L. P. Banr et al.
Spinning, twisting and the like machines, Spindle support forG. W. Farnham
Stanchion, Cattle,
L. P. Banr et al. Steam-boiler. C. W. Todd Steam-engine. N. G. Hershoff Steam-engine. G. W. Baker
Steam-generating plant (2 pars.) M. W. Sewall Steam-trap. C. A. Dunham Steamboat-wheel. J. B. Burch Steering-gear E. Werndl Stiffening device, Garments- H. L. Blackwell
Stiffening device, Garments- II. L. Blackwell Stock-taking device C. J. Strom Stoker, Automatic A. R. Selden Stoker, Mechanical L. F. Torrey
Stoker, MechanicalL. F. Torrey Store-service apparatusL. P. Gately Stove, HeatingS. A. Johnson
Stoker, Mechanical. L. F. Torrey Store-service apparatus. J. P. Gately Stove, Heating S. A. Johnson Stretchers in ambulances, Means for sup- porting. J. T. Shects Swith-frog. J. W. Walls Switch-lock. G. Wuelser Tag. G. T. Riebel
Tambour-frame
Target-throwing trapE. D. Fulford
Teapot, coffee-pot, and other infusing ves- sel. L. L. Grimwade
Taximeter or fare-indicator for hired vehicles. P. Richert Teapot, coffee-lot, and other infusing vessel. L. L. Grimwade Telegraphic-tape perforator. G. A. Arnold Telegraphy, Reflector for wireless
Telephone-body supportV. Tardieu Telephone circuits and switching mechan-
Telephone-locking device. W. A. Soles Telephone system. A. H. Weiss Thormostot I. I. Clayton
Thill attachment, VehiclesT. E. Gallup Thread-cutting mechanism H. P. Kraft Tidal hydranlic-newer plantA. Hanss
ThermostatL. L. Claxton Thill attachment, Vehicles T. E. Gallup Thread-cutting mechanism H. P. Kraft Tidal hydranlic-power plant A. Hanss Tile and the like, Machine for making C. G. Elmore Timber with a preservative fluid, Treating
Timber with a preservative fund, Treating
Tires, Combination pressure-gage and pump connection for pneumaticD. Barnard Tobacco-pipeF. H. Bush
connection for pneumatic. D. Barnard Tobacco-pipe. F. H. Bush Tongue-and-groove joint. T. E. Camp Tool holding and driving device. F. H. Kasperson Tool-operating machine. A. Perrett Tooth-crown, Reinforcer. S. G. Supplee Toy device. E. Komar Toy, Musical advertising. T. S. Spivey Toy Pyretechnic L. A. Petrow
Toot-operating machine. A. Ferrett Tooth-crown, Reinforcer. S. G. Supplee Toy device. E. Komar
Toy. Pyrotechnic. L. A. Petrow Toy. Sounding. R. O. Barler Train-coaling device, Moving C. M. Miller Trap. A. C. Warner Traps and clean-outs for soil-pipes, Cover
Trap. A. C. Warner Traps and clean-outs for soil-pipes, Cover for L. and F. Nair
for L. and F. Nair Trolley. J. S. McCabe Trolley-wire hanger. W. A. McCallum Trousers-stretcher. J. H. Berry
Truck. J. J. Laber Truck, Barrel-lifting. F. A. Moore Truck, Car J. Allison
Trousers-stretcher. J. H. Berry Truck. J. J. Laber Truck, Barrel-lifting. F. A. Moore Truck, Car. J. Allison Truck side frame and journal-box, Car G. G. Floyd Truck side frame, Car. O. S. Pull'am Trunk-fastener. P. Mayfield Tulse. M. F. Anderson et al. Tube-bending machine. R. Tattu Trubes from ductile metal, Producing thin
Trunk-tastenerP. Mayfield TubeM. F. Anderson et al. Tube-bending machineR. Tattu
Walan funn Justile wetel Dasdesine this
Tribes from ductile metal, Producing thin band. J. E. Wilson Turbine. G. de Laval et al Turbine. C. A. Parsons

Turbine-blade strips or sections, Producing

Issued March 21, 1911.

MECHANICAL PATENTS.

MECHANICAL PATENTS.

Acids, Mannfacture of fatty...G. Bottaro Advertising device. R. and G. A. Langstaff Aerial machines, Means for supporting...

L. Bleriot Agitating apparatus, Automatic...

J. T. F. Frechette Agricultural implement...A Riester Air-brake...J. W. Erskine Air-tight joint for tins containing alimentary and other substances. J. J. Griffin Airship...C. A. Kueuzel Airship...B. F. Hansen Airship driving mechanism. J. Schutte Airships, Balancing-gear for...

II. M. DeGraw Almainmun nitrid, Producing...O. Scrpek Amalgamator and separator...J. T. Hogan Amusement apparatus...R. M. Combs Auimals, Electrical device for controlling muruly...A. F. Cogswell Apron, Wire-cloth...A. W. Thompson Arch-supporter...A. Quenzer Antographic register...A. Krauth Automoldile cranking device...S. Wohldt Bag-filling-machine attachment, Open....

C. H. Bricker Bail-holder...P. M. Koenig et al. Bailer, Automatic bilge...J. A. Baab et al. Baking-pan.......E. Wing Ball fields, Truck and cover for the diamonds of base-.....J. P. O'Maley Ball fields. Waterproof diamond-cover for base-.......E. A. Mananx Basket, Knockdown........F. M. Suyder

Bobbins, Machine for automatic insertion	
	I
and threading of	Î
Boiler-checkJ. M. Reiter et al.	
Boiler-flue cleanerW. Eichelberger et al.	Ι
and threading ofJ. Luber Boiler-checkJ. M. Reiter et al. Boiler-flue cleunerW. Eichelberger et al. Bolt-anchorD. H. Haywood Bolts, rivets, &c., Manufacture of	Ι
Bolts, rivets, &c., Manufacture of	
Book, blank. J. W. Gearhart Boot and shoe upper. J. Buckley Bottle. A. T. MacCalian Bottle-filling attachment for bib-faucets.	E
Book, blank	1
Lottle Totale	F
Rottle-filling attachment for hib-faugats	I
F W Corter	1
Bottle, Non-refillableC. Hecker Bottle opener and closerJ. D. Thompson Bottles and the like, Machine for attaching closures toA. Calleson	I
Bottle opener and closerJ. D. Thompson	1
Bottles and the like, Machine for attach-	1
ing closures to	ŀ
Box-making machine,G. E. Priest	
Box-making machine. G. E. Priest Box or crate. C. A. McGown Brake. J. E. Wright	ŀ
Brake. J. E. Wright Brake-lever. J. H. McClaren Brick-press. II. J. Flood Bridle. J. Wilson Broom-holder. T. Sulikx	_
Brake-leverJ. H. McClaren	I
Brick-press	
Droup holder / C. Suller	F
Brush, Shaving	1
Pucket Crane- T A Peharte	
Buckle connection J. W. Savage	F
Buckle Sliding-tongue H Kerngood	
Buckle Suspender A. M. Ziegler	F
Burglar-alarm plates	Ī
Burglar-alarm plates G. Dzerma Buttonhole, Collar C. E. Sackett Camera, Photographic C. E. Hutchings	1
Camera, PhotographicC. E. Hutchings	
Can-top-perforating die. J. H. Kuchenmeister Car-brake. C. A. Barr	I
J. II. Knchenmeister	
Car-brake	ŀ
Car, ConvertibleM. Wiza Car-derailing deviceC. W. Reinoehl et al. Car-door-locking device1. Eagan	1
Car-derailing deviceC. W. Reinoehl et al.	
Car-door-locking device	1
Car-door-operating mechanism. Dumping- (2 pats.)	1
(2 pats.) Λ . G. Elvin	1
Car draft-gear, RailwayA. F. Peterson Car heater, Sleeping E. H. Gold Car heating system, Compartment E. H. Gold Car-heating system, SleepingE. H. Gold	I
Car heater, Sieeping	I
Car nearing system, Compartment	1
Car-harting system Sheering E H Gold	I
Car, PassengerS. R. Skov et al.	Î
Car, Tassenger. S. R. Skov et al. Car-replacer. J. A. Moynihan Car safety-coupling, FreightO. Davis Car steam-heating system, Sleeping E. H. Gold Car switch mechanism, Trolley W. M. Snyder Car-wheel latheG. E. Greenleaf Cars, End stiffener for railway W. S. Atwood	-
Car safety-coupling, FreightO. Davis	I
Car steam-heating system, Sleeping	ŀ
E. H. Gold	ŀ
Car switch mechanism, Trolley	ŀ
	ŀ
Car-wheel latheG. E. Greenleaf	Ī
Cars, End stiffener for railway	F
Cars, Speed-indicator for motor-, J. Onken	ŀ
Cars, Speed-indicator for motor-, J. Onken	Į.
Carbonic oxid, Manufacture of O. Loiseau Card-punching machine, Jacquard	I.
tara-punctung machine, sacquaru	Į.
Carline	
Carriage-door lock Streberger	1
Carriages Rocking attachment for baby	Ī
J. W. Ivers	1
Car. Self-loading	
Cash-register	I
Cash register and indicatorC. D. Grimes	1
Cash-register, RefundingE. J. Von Pein	1
Cement-brick machineC. A. Booher	ĵ.
Carrages, Rocking attachment for bady-,	I
facturing welded wireC. L. Graves Chairs, Reclining mechanism for barbers'	ŀ
F E Kokon]-
Chandelier-crown W Lumler	,
Cigar-making machine P Hagrer	1.
Cigarette and cigarette-tube with mouth-	_
Chandelier-crown E. E. Koken Chandelier-crown	ŀ
Clock-holder	I
Clothes-pinJ. Erwin	ŀ
Clutch-shifting mechanismF. B. Allen	
Coal-washing jiggerT. II, O'Brien	ŀ
Coffee or tea pot strainerA. E. Walton	ŀ
Clock-holder. H. Schmidt Clothes-pin. J. Erwin Clutch-shifting mechanism. F. B. Allen Coal-washing jigger. T. H. O'Brien Coffee or tea pot strainer. A. E. Walton Coin-receptacle. R. M. Jamison et al. Collegible boy L. H. Wilson	j.
Collapsible boxJ. H. Wilson	I
Collar and hames, Universally-adjustable	I.
Collar appropriate H. C. Hoggler	1
Collapsible boxJ. H. Wilson Collar and hames, Universally-adjustable combined horseJ. G. Frieberg Collar-supporterM. C. Messler Color estimation, Apparatus for	ĥ
Combination-knife	Ī
Combination-knife	ì
Combination-lockC. R. Smith et al.	1
Combustion, PromotingJ. H. Parsons	ŀ
Composition of matter for use in making	ŀ
	Ι
E. A. Paterson	ŀ
Computing-machineII. Marshall Concrete and steel tieA. Westing	I
Congrete block mold	I
Concrete construction for nosts and sol	1
Contelete construction for bosts and con-	1
nmns. Reinforced J Rubello et al	ć
umns, ReinforcedJ. Rubello et al. Concrete-post moldH. B. and L. A. Shultz	(
Concrete-block moldA. E. Potter Concrete construction for posts and col- umns, ReinforcedJ. Rubello et al. Concrete-post mold. II. B. and L. A. Shultz ConveyorV. Johnson	,
umns, ReinforcedJ. Rubello et al. Concrete-post mold.H. B. and L. A. Shultz ConveyorV. Johnson Conveyor-supportH. W. Sanner	(
umns, ReinforcedJ. Rubello et al. Concrete-post mold. H. B. and L. A. Shultz ConveyorV. Johnson Conveyor-supportH. W. Sanner Cooking utensilA. T. MacKenzie	
umns, ReinforcedJ. Rubello et al. Concrete-post mold. II. B. and L. A. Shultz ConveyorV. Johnson Conveyor-supportII. W. Sanner Cooking utensilA. T. MacKenzie Cooking utensilJ. Thorne	(
umns, ReinforcedJ. Rubello et al. Concrete-post mold. II. B. and L. A. Shultz Conveyor V. Johnson Conveyor-support III. W. Sanner Cooking utensil A. T. MacKenzie Cooking utensil J. Thorne Cooler	(
umns, Reinforced	(
umns, Reinforced J. Rubello et al. Concrete-post mold. II. B. and L. A. Shultz Conveyor V. Johnson Conveyor-support. II. W. Sanner Cooking utensil A. T. MacKenzie Cooking utensil J. Thorne Cooler C. L. Hendrix Coop. Collapsible. F. D. Bergman Cotter-pin tool D. O. C. Kersten	0
umns, Reinforced J. Rubello et al. Concrete-post mold. H. B. and L. A. Shultz Conveyor V. Johnson Conveyor-support. H. W. Sanner Cooking utensil A. T. MacKenzie Cooking utensil J. Thorne Cooler C. L. Hendrix Coop. Collapsible F. D. Bergman Cotter-pin tool D. O. C. Kersten Cotton-chopper J. J. Crow Counter.	(
umns, Reinforced J. Rubello et al. Concrete-post mold. H. B. and L. A. Shultz Conveyor V. Johnson Conveyor-support. H. W. Sanner Cooking utensil A. T. MacKenzie Cooking utensil J. Thorne Cooler C. L. Hendrix Coop, Collapsible F. D. Bergman Cotter-pin tool D. O. C. Kersten Cotton-chopper J. J. Crow Counter. S. W. Wardwell Chank-hanger Adjustable C. J. Johnson	0
umns, Reinforced	0
umns, Reinforced	0
umns, Reinforced J. Rubello et al. Concrete-post mold. II. B. and L. A. Shultz Conveyor V. Johnson Conveyor-support. II. W. Sanner Cooking utensil A. T. MacKenzie Cooking utensil J. Thorne Cooler C. L. Hendrix Coop. Collapsible F. D. Bergman Cotter-pin tool D. O. C. Kersten Cotton-chopper J. J. Crow Counter S. W. Wardwell Crank-hauger, Adjustable C. L. Jenness Cream-tester M. G. Campan Crutch, Adjustable. F. E. Shadell et al. Culivators and plows. Ferrilizer-drill af-	0
umns, Reinforced J. Rubello et al. Concrete-post mold. H. B. and L. A. Shultz Conveyor V. Johnson Conveyor-support. H. W. Sanner Cooking utensil. A. T. MacKenzie Cooking utensil. J. Thorne Cooler C. L. Hendrix Coop. Collapsible. F. D. Bergman Cotter-pin tool. D. O. C. Kersten Cotton-chopper J. J. Crow Counter. S. W. Wardwell Crank-hanger, Adjustable. C. L. Jenness Cream-tester M. G. Campan Crutch, Adjustable. F. E. Shadell et al. Culivators and plows, Fertilizer-drill at- tachment to W. F. Marsh	0
umns, Reinforced	0
umns, Reinforced	0
umns, Reinforced J. Rubello et al. Concrete-post mold. II. B. and L. A. Shultz Conveyor V. Johnson Conveyor-support. II. W. Sanner Cooking utensil. A. T. MacKenzie Cooking utensil J. Thorne Cooler C. L. Hendrix Coop. Collapsible F. D. Bergman Cotter-pin tool D. O. C. Kersten Cotton-chopper J. J. Crow Counter. S. W. Wardwell Crank-hanger, Adjustable C. L. Jenness Cream-tester M. G. Campan Crutch, Adjustable. F. E. Shadell et al. Culivators and plows, Fertilizer-drill at- tachment to W. F. Marsh Current-controlling apparatus W. N. Dickinson, Jr. Cutter-head. Expansion. II. J. Mitchell	0
Conveyor-support. II. W. Sanner Cooking utensil. A. T. MacKenzie Cooking utensil. I. Thorne Cooler. I. Hendrix Coop. Collapsible. F. D. Bergman Cotter-pin tool. D. O. C. Kersten Cotton-chopper. J. J. Crow Counter. S. W. Wardwell Crank-hanger, Adjustable. C. L. Jenness Cream-tester. M. G. Campan Crutch, Adjustable. F. E. Shadell et al. Culivators and plows, Fertilizer-drill attachment to. W. F. Marsh Current-controlling apparatus. Cutter-head, Expansion. II. J. Mitchell Deceminating Machine J. Broling.	0
Conveyor-support. II. W. Sanner Cooking utensil. A. T. MacKenzie Cooking utensil. I. Thorne Cooler. I. Hendrix Coop. Collapsible. F. D. Bergman Cotter-pin tool. D. O. C. Kersten Cotton-chopper. J. J. Crow Counter. S. W. Wardwell Crank-hanger, Adjustable. C. L. Jenness Cream-tester. M. G. Campan Crutch, Adjustable. F. E. Shadell et al. Culivators and plows, Fertilizer-drill attachment to. W. F. Marsh Current-controlling apparatus. Cutter-head, Expansion. II. J. Mitchell Deceminating Machine J. Broling.	0
Conveyor-support. II. W. Sanner Cooking utensil. A. T. MacKenzie Cooking utensil. J. Thorne Cooler. C. L. Hendrix Coop, Collapsible. F. D. Bergman Cotter-pin tool. D. O. C. Kersten Cotton-chopper. J. J. Crow Counter. S. W. Wardwell Crank-hauger, Adjustable. C. L. Jenness Cream-tester. M. G. Campan Crutch, Adjustable. F. E. Shadell et al. Culivators and plows, Fertilizer-drill attachment to. W. F. Marsh Current-controlling apparatus. W. N. Dickinson, Jr. Cutter-head, Expansion. II. J. Mitchell Decorticating-machine. J. Brolin Dental prosthesis, Preparing and coloring ulastic substances used as bases in.	0
Conveyor-support. II. W. Sanner Cooking utensil. A. T. MacKenzie Cooking utensil. J. Thorne Cooler. C. L. Hendrix Coop. Collapsible. F. D. Bergman Cotter-pin tool. D. O. C. Kersten Cotton-chopper. J. J. Crow Counter. S. W. Wardwell Crank-hanger, Adjustable. C. L. Jenness Cream-tester. M. G. Campan Crutch, Adjustable. F. E. Shadell et al. Culivators and plows, Fertilizer-drill attachment to. W. F. Marsh Current-controlling apparatus. W. N. Dickinson, Jr. Cutter-head, Expansion. II. J. Mitchell Decorticating-machine. J. Brolin Dental prosthesis, Preparing and coloring plastic substances used as bases in. L. Eilersten	0
Conveyor-support. II. W. Sanner Cooking utensil. A. T. MacKenzie Cooking utensil. J. Thorne Cooler. C. L. Hendrix Coop. Collapsible. F. D. Bergman Cotter-pin tool. D. O. C. Kersten Cotton-chopper. J. J. Crow Counter. S. W. Wardwell Crank-hanger, Adjustable. C. L. Jenness Cream-tester. M. G. Campan Crutch, Adjustable. F. E. Shadell et al. Culivators and plows, Fertilizer-drill attachment to. W. F. Marsh Current-controlling apparatus. W. N. Dickinson, Jr. Cutter-head, Expansion. II. J. Mitchell Decorticating-machine. J. Brolin Dental prosthesis, Preparing and coloring plastic substances used as bases in. L. Eilersten	
Conveyor-support. II. W. Sanner Cooking utensil. A. T. MacKenzie Cooking utensil. J. Thorne Cooler. C. L. Hendrix Coop. Collapsible. F. D. Bergman Cotter-pin tool. D. O. C. Kersten Cotton-chopper. J. J. Crow Counter. S. W. Wardwell Crank-hanger, Adjustable. C. L. Jenness Cream-tester. M. G. Campan Crutch, Adjustable. F. E. Shadell et al. Culivators and plows, Fertilizer-drill attachment to. W. F. Marsh Current-controlling apparatus. W. N. Dickinson, Jr. Cutter-head, Expansion. II. J. Mitchell Decorticating-machine. J. Brolin Dental prosthesis, Preparing and coloring plastic substances used as bases in. L. Eilersten	
Conveyor-support. II. W. Sanner Cooking utensil. A. T. MacKenzie Cooking utensil. J. Thorne Cooler. C. L. Hendrix Coop. Collapsible. F. D. Bergman Cotter-pin tool. D. O. C. Kersten Cotton-chopper. J. J. Crow Counter. S. W. Wardwell Crank-hanger, Adjustable. C. L. Jenness Cream-tester. M. G. Campan Crutch, Adjustable. F. E. Shadell et al. Culivators and plows, Fertilizer-drill attachment to. W. F. Marsh Current-controlling apparatus. W. N. Dickinson, Jr. Cutter-head, Expansion. II. J. Mitchell Decorticating-machine. J. Brolin Dental prosthesis, Preparing and coloring plastic substances used as bases in. L. Eilersten	0
Conveyor-support. II. W. Sanner Cooking utensil. A. T. MacKenzie Cooking utensil. J. Thorne Cooler. C. L. Hendrix Coop. Collapsible. F. D. Bergman Cotter-pin tool. D. O. C. Kersten Cotton-chopper. J. J. Crow Counter. S. W. Wardwell Crank-hanger, Adjustable. C. L. Jenness Cream-tester. M. G. Campan Crutch, Adjustable. F. E. Shadell et al. Culivators and plows, Fertilizer-drill attachment to. W. F. Marsh Current-controlling apparatus. W. N. Dickinson, Jr. Cutter-head, Expansion. II. J. Mitchell Decorticating-machine. J. Brolin Dental prosthesis, Preparing and coloring plastic substances used as bases in. L. Eilersten	
Conveyor-support. II. W. Sanner Cooking utensil. A. T. MacKenzie Cooking utensil. J. Thorne Cooler. C. L. Hendrix Coop. Collapsible. F. D. Bergman Cotter-pin tool. D. O. C. Kersten Cotton-chopper. J. J. Crow Counter. S. W. Wardwell Crank-hanger, Adjustable. C. L. Jenness Cream-tester. M. G. Campan Crutch, Adjustable. F. E. Shadell et al. Culivators and plows, Fertilizer-drill attachment to. W. F. Marsh Current-controlling apparatus. W. N. Dickinson, Jr. Cutter-head, Expansion. II. J. Mitchell Decorticating-machine. J. Brolin Dental prosthesis, Preparing and coloring plastic substances used as bases in. L. Eilersten	
Conveyor-support. II. W. Sanner Cooking utensil. A. T. MacKenzie Cooking utensil. A. T. MacKenzie Cooking utensil. J. Thorne Cooler. C. L. Hendrix Coop. Collapsible. F. D. Bergman Cotter-pin tool. D. O. C. Kersten Cotton-chopper. J. J. Crow Counter. S. W. Wardwell Crank-hauger, Adjustable. C. L. Jenness Cream-tester. M. G. Campan Crutch, Adjustable. F. E. Shadell et al. Culivators and plows, Fertilizer-drill attachment to. W. F. Marsh Current-controlling apparatus. W. N. Dickinson, Jr. Cutter-head, Expansion. H. J. Mitchell Decorticating-machine. J. Brolin Dental prosthesis, Preparing and coloring plastic substances used as bases in Derrick for stacking hay, &c. C. O. Kinney Dish-washing machine. G. Brander Dish-washing machine. W. C. Schrader Dish-washing machine. W. C. Schrader Dishyay-rack. O. L. Smith Ditching and grading machine. J. D. Martin Ditching-machine. H. Matthies	
Conveyor-support. II. W. Sanner Cooking utensil. A. T. MacKenzie Cooking utensil. A. T. MacKenzie Cooking utensil. J. Thorne Cooler. C. L. Hendrix Coop. Collapsible. F. D. Bergman Cotter-pin tool. D. O. C. Kersten Cotton-chopper. J. J. Crow Counter. S. W. Wardwell Crank-hauger, Adjustable. C. L. Jenness Cream-tester. M. G. Campan Crutch, Adjustable. F. E. Shadell et al. Culivators and plows, Fertilizer-drill attachment to. W. F. Marsh Current-controlling apparatus. W. N. Dickinson, Jr. Cutter-head, Expansion. H. J. Mitchell Decorticating-machine. J. Brolin Dental prosthesis, Preparing and coloring plastic substances used as bases in Derrick for stacking hay, &c. C. O. Kinney Dish-washing machine. G. Brander Dish-washing machine. W. C. Schrader Dish-washing machine. W. C. Schrader Dishyay-rack. O. L. Smith Ditching and grading machine. J. D. Martin Ditching-machine. H. Matthies	
Conveyor-support. II. W. Sanner Cooking utensil. A. T. MacKenzie Cooking utensil. J. Thorne Cooler. C. L. Hendrix Coop. Collapsible. F. D. Bergman Cotter-pin tool. D. O. C. Kersten Cotton-chopper. J. J. Crow Counter. S. W. Wardwell Crank-hauger, Adjustable. C. L. Jenness Cream-tester. M. G. Campan Crutch, Adjustable. F. E. Shadell et al. Culivators and plows. Fertilizer-drill attachment to. W. F. Marsh Current-controlling apparatus. W. N. Dickinson, Jr. Cutter-head, Expansion. H. J. Mitchell Decorticating-machine. J. Brolin Dental prosthesis, Preparing and coloring plastic substances used as bases in. L. Eilersten Derrick for stacking hay, &c. C. O. Kinney Dish-washing machine. G. Brander Dish-washing machine. W. C. Schrader Display-rack. O. L. Smith Ditching and grading machine. J. D. Martin Ditching and grading machine. J. Matthies Door-check. H. K. Fairall Door-check. J. H. K. Fairall	
Conveyor-support. II. W. Sanner Cooking utensil. A. T. MacKenzie Cooking utensil. J. Thorne Cooler. C. L. Hendrix Coop. Collapsible. F. D. Bergman Cotter-pin tool. D. O. C. Kersten Cotton-chopper. J. J. Crow Counter. S. W. Wardwell Crank-hauger, Adjustable. C. L. Jenness Cream-tester. M. G. Campan Crutch, Adjustable. F. E. Shadell et al. Culivators and plows. Fertilizer-drill attachment to. W. F. Marsh Current-controlling apparatus. W. N. Dickinson, Jr. Cutter-head, Expansion. H. J. Mitchell Decorticating-machine. J. Brolin Dental prosthesis, Preparing and coloring plastic substances used as bases in. L. Eilersten Derrick for stacking hay, &c. C. O. Kinney Dish-washing machine. G. Brander Dish-washing machine. W. C. Schrader Display-rack. O. L. Smith Ditching and grading machine. J. D. Martin Ditching and grading machine. J. Matthies Door-check. H. K. Fairall Door-check. J. H. K. Fairall	
Conveyor-support. II. W. Sanner Cooking utensil. A. T. MacKenzie Cooking utensil. J. Thorne Cooler. C. L. Hendrix Coop. Collapsible. F. D. Bergman Cotter-pin tool. D. O. C. Kersten Cotton-chopper. J. J. Crow Counter. S. W. Wardwell Crank-hauger, Adjustable. C. L. Jenness Cream-tester. M. G. Campan Crutch, Adjustable. F. E. Shadell et al. Culivators and plows. Fertilizer-drill attachment to. W. F. Marsh Current-controlling apparatus. W. N. Dickinson, Jr. Cutter-head, Expansion. H. J. Mitchell Decorticating-machine. J. Brolin Dental prosthesis, Preparing and coloring plastic substances used as bases in. L. Eilersten Derrick for stacking hay, &c. C. O. Kinney Dish-washing machine. G. Brander Dish-washing machine. W. C. Schrader Display-rack. O. L. Smith Ditching and grading machine. J. D. Martin Ditching and grading machine. J. Matthies Door-check. H. K. Fairall Door-check. J. H. K. Fairall	
Conveyor-support. II. W. Sanner Cooking utensil. A. T. MacKenzie Cooking utensil. J. Thorne Cooler. C. L. Hendrix Coop. Collapsible. F. D. Bergman Cotter-pin tool. D. O. C. Kersten Cotton-chopper. J. J. Crow Counter. S. W. Wardwell Crank-hauger, Adjustable. C. L. Jenness Cream-tester. M. G. Campan Crutch, Adjustable. F. E. Shadell et al. Culivators and plows. Fertilizer-drill attachment to. W. F. Marsh Current-controlling apparatus. W. N. Dickinson, Jr. Cutter-head, Expansion. H. J. Mitchell Decorticating-machine. J. Brolin Dental prosthesis, Preparing and coloring plastic substances used as bases in. L. Eilersten Derrick for stacking hay, &c. C. O. Kinney Dish-washing machine. G. Brander Dish-washing machine. W. C. Schrader Display-rack. O. L. Smith Ditching and grading machine. J. D. Martin Ditching and grading machine. J. Matthies Door-check. H. K. Fairall Door-check. J. H. K. Fairall	
Conveyor-support. II. W. Sanner Cooking utensil. A. T. MacKenzie Cooking utensil. J. Thorne Cooler. C. L. Hendrix Coop. Collapsible. F. D. Bergman Cotter-pin tool. D. O. C. Kersten Cotton-chopper. J. J. Crow Counter. S. W. Wardwell Crank-hauger, Adjustable. C. L. Jenness Cream-tester. M. G. Campan Crutch, Adjustable. F. E. Shadell et al. Culivators and plows. Fertilizer-drill attachment to. W. F. Marsh Current-controlling apparatus. W. N. Dickinson, Jr. Cutter-head, Expansion. H. J. Mitchell Decorticating-machine. J. Brolin Dental prosthesis, Preparing and coloring plastic substances used as bases in. L. Eilersten Derrick for stacking hay, &c. C. O. Kinney Dish-washing machine. G. Brander Dish-washing machine. W. C. Schrader Display-rack. O. L. Smith Ditching and grading machine. J. D. Martin Ditching and grading machine. J. Matthies Door-check. H. K. Fairall Door-check. J. H. K. Fairall	
Conveyor-support. II. W. Sanner Cooking utensil. A. T. MacKenzie Cooking utensil. A. T. MacKenzie Cooking utensil. J. Thorne Cooler. C. L. Hendrix Coop. Collapsible. F. D. Bergman Cotter-pin tool. D. O. C. Kersten Cotton-chopper. J. J. Crow Counter. S. W. Wardwell Crank-hauger, Adjustable. C. L. Jenness Cream-tester. M. G. Campan Crutch, Adjustable. F. E. Shadell et al. Culivators and plows, Fertilizer-drill attachment to. W. F. Marsh Current-controlling apparatus. W. N. Dickinson, Jr. Cutter-head, Expansion. H. J. Mitchell Decorticating-machine. J. Brolin Dental prosthesis, Preparing and coloring plastic substances used as bases in Derrick for stacking hay, &c. C. O. Kinney Dish-washing machine. G. Brander Dish-washing machine. W. C. Schrader Dish-washing machine. W. C. Schrader Dishyay-rack. O. L. Smith Ditching and grading machine. J. D. Martin Ditching-machine. H. Matthies	

Dropper and standard, H. A. Westmoreland Dyeing-machines. Revolving collapsible beam for (2 pats.)F. M. Morton Dyes for wool, MonoazoW. Herzberg Dyestuff, Direct-dyeing cottonJ. H. Turner et al. Edge-trinuing machineA. S. Vosc Electric heater, and starilizer.
Dyes for Wool, Monoazo W. Herzberg Dyestuff, Direct-dyeing cotton
Edge-trinuning machineA. S. Vose Electric heater and sterilizer
Electric heater and sterilizer
Electric-meter recorders, Actuating means for
Electric switchO. B. Whipple Electrical distribution system. (2 pats.) W. A. Turbayne
Electrical distribution system. (2 pats.) A. S. Hubbard
Electric induction-furnace. W. Rodenhauser Electric-light switch for telephone-booths. S. M. O. Grant Electric-meter recorders, Actuating means for. C. M. Page Electric switch. O. B. Whipple Electrical distribution system. (2 pats.). W. A. Turbayne Electrical distribution system. (2 pats.). A. S. Hubbard Electrical distribution system including a metering paneiboard, Metering. F. F. Skeel Electrical generators and motors, Method of and apparatus for eooling. F. G. Baum
of and apparatus for ecoling
F. G. Raum Electrical regulating apparatus. W. A. Turbayne Electrical switch. W. A. Turbayne Electrolytic cell. V. E. Goodwin Electromagnet, Alternating-current. D. L. Linquist Electrothermal controlling apparatus. W. O. Haymond Elevator. P. Wright Elevator and dumb-waiter systems, Push- button control for. E. L. Dunn
Electronignet, Alternating-current; D. L. Linquist
Electrothermal controlling apparatus W. O. Haymond Elevator
Elevator and dumb-waiter systems, Push- button control for E. L. Dunn Elevator-operating system E. L. Dunn Engine D. R. Seholes
Engine heat-radiating structure
Engine-starter
Excavating and transporting soil, &c. Apparatus for the Excavation of the Excavation of the Example of the Exam
Excavating and transporting soil, &c., Apparatus for
Eyerlasses. L. F. Adt. Fare-register. J. F. Ohmer
Faucet, Push-button. G. R. Long Faucet, Self-closing. H. G. Cordley
Feder, Boher. W. Houser Fence-post. W. J. Mettler Fence-post. J. W. Meyer
Fence-post and fence-wire fastener
Fibrous or cellulose materials, Treating I. H. Ketcheson File-case, Account-book C. W. Wynne File, Prescription S. G. Eghan Filing-cabinet C. M. Harris Filing device F. Wendling
Filing deviceF. Wendling Film-pack adapterII. M. R. Glover Fire, Apparatus for life-saving in cases of.
Fire protecting and signalling apparatus
Fire-resisting shutter, Automatic E. H. McClond Firearm. H. B. Febiger Firearm. T. Consentino Firearm trigger mechanism, Automatic H. Borchardt Fish. Drying. E. Passburg
Firearm
Fish, Drying, E. Passburg Fishing-float. C. Williams
Flue-plug
Flushing-machine, StreetJ. I. Brorby Flying-machineM. A. Parisano Flying-machineO. and W. Wright
Folding boxS. Bachmann Folding standR. L. Cooley Folding tableK. G. Johanson
Food-mold
Fish. Drying. E. Passburg Fishing-float. C. Williams Fishing-reel. (2 pats.) J. vom Hofe Flour of maize, Making. A. and A. Erosa Flue-plug. S. Adams Flue-plug. S. Adams Flushing-machine. Street. J. I. Brorby Flying-machine. M. A. Parisano Flying-machine. O. and W. Wright Folding box. S. Bachmann Folding stand. R. L. Cooley Folding table. K. G. Johanson Food-mold. S. P. Ljutica Foundation apparatus. S. K. Smith Funnel. Collapsible. A. L. Harrington Funnel. Straining- W. S. Schuyler Furnace-draft-operating apparatus. W. H. Schubert Furnacing, Preparing Materials for. G. W. Coggeshail Furniture-clamp. D. S. Ackley Game-counter. H. Marshall
Furniture-clamp D. S. Ackley
Carment-manger
Gas-calorimeter, Recording
Gas generator, Gasolene T. A. Davis Gas-igniting fixture, ElectricH. Younker
Gas-meters, Frost-water shield for
Gas-pipes, Dust-catcher forT. Durnbaugh Gas-producerB. Versen Gas-regulatorC. W. Harrison et al. Gate-fastenerR. O. Lewis
Gearing Frictional A C Long
Glass articles, Machine for making
Glass-pot stopperC. L. Betz GrappleH. F. Köhler
Grinder attachmentJ. M. Jensen et al. Grinding and dressing machine for castings.
B. Toth Grinding and jointing appliance for planers. H. J. Mitchell Grinding machine, Cutter-, H. E. Eberhard
Grinding machine, CutterH. E. Eberhard Grinding-machine for sharpening edged toolsE. S. Mummert Gun-closure safety deviceM. Hermsdorf
Gun, Recoil
Harness-releasing apparatus. A Binnie et al. Harrow H. M. Rhodes Harrow-weeder
TIME ON - N CCALLI D. Dateman

larvesting machine, CornF. King lat-fastenerX. H. Hassel fat-pinE. E. Westfall lat-pin protector aud fastenerJ. W. Barnard Lat sweat-bandB. Z. Smith lateh-cover. Self-operated
lat-pm protector and fastener
G. and S. Walker Iny-rack I. Kern leater G. F. Lidy Lagrang system F. H. Gold
Heating system, Multiple-regulation E. II. Gold Hinge, Adjustable C. K. Wolf
O. Katzenberger Joist, Freight- R. G. Wetherhill Loisting apparatus. F. Fisher, Jr.
Hopper. H. W. Welsh Horse-stopping device, Runaway J. Rinaldi
Iorse-stopping device, Runaway J. Rinaldi Jose-coupling O. A. Hodinger Hose-patch and applying-toolB. Hoover Lyrdant J. F. Ferry Lydrant A. Ceranek Lydromobile J. W. Tebyrica Lydrosulphites, Dehydrating hydrated H. Rey ee-creeper B. Bargess neaudeseent mantles, Manufacture of T. Terrell
Iydromobile. M. W. Tebyrica Iydrosulphites, Dehydrating hydrated. H. Rey ee-creeper. B. Bargess
ee-creeper. B. Bargess neandeseent mantles, Manufacture of. T. Terrell ncubator-heater regulator. C. E. Adair ndicating device. F. R. Paine ndicating mechanism. C. B. Stillwell nhaler. J. Wilkie ntegrator, Automatie. F. E. Pendleton nternal-combustion apparatus, Constant- pressure. E. P. Noyes ron manufacture. R. B. Carnahan, Jr. ron plates of large area, Manufacture of thin electrolytic. W. Pfanhauser roning and pressing machine. P. Jonesku (Reissue.) roning-board. C. W. Springford roning-board. H. M. Eagon roning-machine. H. P. Rose igger. W. Seltner Kinctoscopes, Film-feeding mechanism for. W. J. ymons et al. abels or bands on filled bottles, Machine for pasting. B. E. Jagenberg accing-fastener. W. E. Crun adder, Extensible. W. Mayer adder, Safety car- M. F. Saling amp-bracket, Automobile. R. H. Rohrer amp changer, Electric- N. Marshall amp-soeket. N. Marshall
ndicating mechanismC. B. Stillwell nhalerJ. Wilkie ntegrator, AutomatieF. E. Pendleton ntegral-combustion, apparatus.
pressure. E. P. Noyes ron manufacture. R. B. Carnahan, Jr. ron plates of large area, Manufacture of thin electrolytic. W. Pfunbauser
roning and pressing machineP. Jonesku (Reissue.) roning-boardC. W. Springford
rouling-machine
abels or bands on filled bottles, Machine for pasting B. E. Jagenberg acing-fastener W. E. Crain
adder, Extensible
amp, PocketJ. C. C. Lenz amp-socketN. Marshall amp-soeket eap, Electrie
amp-socket eap, Electrie
atch attachment, DoorA. W. Upton atch-lockD. W. Tower athe. Metal-spinningF. A. Shulz athe-toolA. H. Ihsen
athe-tool. A. H. Ihsen awn-trimmer. A. I. Champion lecithin, lecith-albumin, and their by-products out of raw material containing lecithin, Obtaining. J. Habermann et al. lens-grinding machine. S. G. and E. G. Robinson level. J. B. Smith life-rail, cap-course, and gutter construction. J. F. Booraem life-saving device. A. Gawenda et al. line-drying reel. E. Speneer inotype-machine. S. M. Limmus liquid-dispensing apparatus. W. E. Hogdon liquid-feeding device. S. B. Battey liquid suspended in another liquid, Apparatus for separating and collecting parti-
Lens-grinding machine
tion. J. F. Booraem ife-saving device. A. Gawenda et al. ine-drying reel. E. Speneer instructors weeking. S. M. Lummus
iquid-dispensing apparatus. W. E. Hogdon iquid-feeding device
cles of oneF. G. Cottrell et al.
ing and collecting particles of one
iquid suspended in another liquid, Separating and collecting particles of oneF. G. Cottrell et al.
ignid suspended in another liquid, Separing and collecting particles of one
N. Olson on protector mechanism. A. J. Chevrette om-shnttle
O. Hallensleben Lumber-stacker Edge-piling. G. F. Steedman Jachine-tool chuck attachment
Janure-loader
Measure, Steel tapeK. G. Shutt Measuring device, TempleE. L. Nero Measuring cosselW. H. Bender et al. Measts during curing Overhauling.
Mechanical movement, W. C. Pyes Mechanical movement, P. Lord Metal-founder's mold, D. F. Digan Metal-planer, W. T. Sears Metal prop. Flexible, A. Pitroff Metal, Ribbed expanded, J. Kahn
Metal prop. FlexibleA. Pitroff Metal. Ribbed expandedJ. Kahn Microscopes, Fine adjustment for
Microscopes, Fine adjustment for
Mortise-and-tenon hopper-joint machine J. H. O'Neill Monthplece grinding, faeing and polishing device. C. H. Lind Mowing-machine. A. Monroe
Music-standJ. Caputi Music turner, SheetC. E. Bell Musical instruments, Pneumatic action for
O. Higel

Kail-boxG. H. Dahlke Kail-feeding deviceA. M. Taylor Kecktie-retainerW. A. Huth Kinners.
Sippers. F. Sale Sitrogen compounds, Producing, A. R. Frank Sozzle-veinforeing means. H. C. Fritz
Keckte-retainer. W. A. Huth Kippers. F. Sale Kitrogen compounds, Producing A. R. Frank Kozzle-veinforeing means. H. C. Fritz Kumbering machine, Multiple- C. L. Johnston Kut-loek. E. A. Blanton, Jr. bil burner, Black- J. W. Elder bil kean Vonexplosive J. L. Long J. L. Long Kortenstein State Company Consequence of the
oil burner, Black
surgeons. B. D. Thorner ore-concentrator. II. E. Wood Ores and for the electrolytic deposition of
solutions containing said metals, Apparatus for the treatment ofF. C. Brown dres. Treatment of sulfidJ. A. McLarty
Oven, Electric
solutions containing said metals, Apparatus for the treatment ofF. C. Brown Ores. Treatment of sulfidJ. A. McLarty Oven, Electric
Papers, Producing. W. B. Spannath et al. Papers, Producing. W. H. Howes Paring apparatus. W. H. Boutell Pencil. Corographie. A. Reinmann et al.
Perforator. S. H. Wilberg Photographie apparatus, Bellows-support for. C. E. Hutchings Richtung Slung Coating
Pipe-coupling. J. H. Allan Pith-boring device. C. Nave Planer-head, Matching. H. J. Mitchell
Plow J. Dengel
Plow, Motor W. Strohmer Plow, Reversible disk A. P. MeKay Plow standard and brace, Pivoted W. A. Pledger, Jr.
Ping. TestingJ. Leisinger Plumb for corners, pilasters. &c
Plungers, Antifriction device for lower ends ot L. Atwood Cocket Corment. D. Ginsburg
Caner (4 pats.)
Power-transmitting deviceG. E. Molynenx Presses. Housing for roller-straightening
C. D. Dishong Pressure and damper regulator J. B. Bischoff Pressure-gage L. Dewrance
J. B. Bisehoff Pressure-gage. L. Dewrance Primary battery. C. B. Schoenmehl Printing. E. L. Fell Pulley. Belt-conveyor. E. H. Messiter Pulp-strainer. R. Wagner Pump. E. A. Connor et al.
Pump. E. A. Connor et al. Pump. T. Meixner Pump. T. Meixner Pump. T. Meixner Pump. Air-lift displacement F. E. Ten Eyck Pumps and drills, Means for operating walking-beams of deep-well. Pumps, Lining-plnnger for oil-well. D. Daniels et al. Punch. W. J. Goodwin Rail anticreeping device. E. M. Smith Rail-chair. J. F. Kersteter Rail elamp, Gnard. C. W. Reinhoehl et al. Rail, Guard. T. Carmiehael Rail-joint. A. C. Jorns
Pumps and drills, Means for operating walking-beams of deep-well
D. Daniels et al. Punch. W. J. Goodwin Rail anticreeping device E. M. Smith Rail-bond. A. B. Herrick
Rail-chairJ. F. Kersteter Rail elamp, GnardC. W. Reinhoehl et al. Rail, GuardF. B. Bradley Rail GnardT. Carmiehael
Rail-jointA. C. Jorns Railway ehair and plateM. She ¹ ton Railway-rail, Rolled maganese-steel W. S. Potter
Rail, Guard
C. W. Reinoehl et al. Railway-tie J. H. Mowry et al. Railway-track J. J. Ingersoll, Jr. Rannway-Chair. R. Voegler
Ratchet-head and lever therefor
Registering system and apparatus
Rocks containing potassium, Treating
Rotary explosive-engine. J. C. and R. T. Peterson Rules, Device for holding plumb J. O. Swenson
Rnles, Device for holding plumb
Sash-lock
SeaffoldS. Rashkovsky Seale attachment, Wagon-weighing W. D. McClelland Scale, PlatformE. C. Sooy
Seale attachment, Wagon-weighing. Scale, Platform. W. D. McClelland Scale, Platform. E. C. Sooy Seale, Platform. J. Himmes Screw-bolt. W. F. Kenney Sectional wheel. E. B. Fitzgerald Serving device. T. J. Burke Sewer construction. J. L. Potter Sewing-machine attachment. S. Riner Shaper-guard. P. Erickson
Sewer construction. J. L. Potter Sewing-machine attachment. S. Riner Shoot fastoner G. L. Edgerton
Shaper-guard. P. Eriekson Sheet-fastener. G. L. Edgerton Shell or projectile. W. L. Murphy Size, Manufacturing. L. Paechtner

	_
Shuttle-blocks, Manufacturing	
Sleigh, Motors	
C. M. Brooker straws. Machine for holding and dispensing. R. J. Woodbury Soldering device. (Reissue.). F. S. Chapman Sonnd-box. J. A. Williams Sonnding apparatus. F. Schnbert Speed-changing mechanism. W. C. Conant Spindle. H. L. Brown Spinning-machine. D. O. Pease Spring-frame, Adjustable reclining.	
Spring-trip-foot-adjusting device	
tachment for	
Stencil-machine. S. D. Hartog Stoker, Mechanical. W. R. Wood Stone and metal shaping machine.	
Store-front construction. F. Kritz Stove regulator. Gas- C. S. Harris Stretching apparatus. C. J. and J. Ganer Stuffing-box. J. Hahn Supporting mechanism. A. Scheible Suspending structure for fragile articles.	
Swing, Circular pleasureJ. A. Whitlock SwitchE. E. Yaxley	
Switching device	
Tankage and manure press	
Telegraph-key	
Telegraph sey	
Tire	
of motor-cars, &c. J. S. Clarke Tire-saver. L. Willour Tire, Vehicle E. C. Bruen	
Tires, Metal rim for vehicleJ. C. Cole ToiletM. E. Connelly Tool, combinationA. Lawson Tooth, ArtificialH. Wienand	
Trap. W. J. Clark Trap. L. C. Accola Trolley-wires, Insulating-hanger for. J. L. Wagner	
Trousers	
Trink, Wardrobe	
Type-writer. J. W. Barnberger Umbrella, Folding. W. C. Wolfe Valve. W. J. Theis Valve. E. Dwyer	
Valve	
engines	
Vehicle-wheel, ResilientR. T. Evans Vending-machineB. Lovatt Vending-machine, Coin-controlled	
Ventilator. R. L. Crescy Ventilator. R. L. Crescy Ventilator. E. Stephany Vest-holder. M. Schwartz Wagon rack, Dumping- W. W. Ditmer Wagon running-gear. J. R. McAlister	
Washing-hardine operating meenansm G. N. Meves Watch-retainer, SafetyF. M. Franklin Water and steam coupling	
Water-heater Fleetric H N Pocho et al	
Water, vacuum and pressure gage, antomatic regulator, and safety device, Combined	
Wheat-separating machineN. L. Heldman Wheel with multiple and balanced rims H. Lotte Wheels or pulleys, Manufacturing	(
Wheels or pulleys, ManufacturingE. II. Jones	(

Whip-socket
WindmillJ. O'Toole
Window-screen
Windows, Antomatic locking device for
sash
Wood-splint-entting machineF. Schafer
Wood-splitting machine, (Reissne.)
J. Power
Wooden article and producing same, Com-
pressedJ. W. Hyatt
Work-holder, AdjustableM. M. Kerr
WrenchE. C. Doolittle
Wringer and washing-machine attachment
······W. E. Flood

Issued March 28, 1911.

MECHANICAL PATENTS. Acetyl cellulose compounds, Making......O. Bonhoffer et al.
Acid derivatives and making the same, Esters of salicylic....N. Sulzberber et al.
Adding device....B. R. Scott
Adding-machine computing attachment. Calcium ferrite aud phosphorus pentoxid.
Making. S. Peacock
Calenlating-machines. Motor mechanism for
R. Rein
Calculating-machines. Stepped roller for
R. Rein
Camera. D. J. Gallagher
Can-opener. G. A. Jaeger
Can-switch. D. Vallarino
Candle and candle-holder for use in church
services. R. R. Doody
Candle for use in church services.
B. R. Doody
Candle for use in church services.
B. R. Doody
Candy-batch roller. N. W. York
Car-coupling. S. F. Klohs
Car-door. P. J. Harrigan
Car, Dump- P. J. Harrigan
Car, Railway- W. S. Hovey et al.
Car safety appliance. StreetW. R. Betham
Carpet-cleaning apparatus. M. C. Warnock
Carriage-control mechanism. C. Spiro
Cartridge or shell boxing mechanism.
Casket-mattress. H. M. Leonard
Casket-mattress. H. M. Leonard
Casket-sealing means. L. H. Montross
Casting thin strips of metal. R. C. Edkin
Centrifugal machine. C. R. Reynolds
Centrifugal machine. C. R. Reynolds
Centrifugal separator. F. H. Fleege
Chains, Lag for conveyor- J. K. Alston
Chair fan attachment. A. N. Anderson
Check holder. Restanrant-pay- F. Thum
Chuck for polishing devices. Reinforcing
extension- J. D. Coney
Churn. H. L. Van Valkenburg
Cleansing device. S. Hymes
Clock, Electrice. L. F. Stadel

Clip for fastener for garments, binders, &
Closet-bowl ventilator. F. Levenhagen et a Clutch, ControllerE. H. Wes Clutch, Governor-controlled friction
Clutch, Multiple-disk. A. P. Brus Coal burner, Powdered- A. D. Le Coat attachment or birch L. P. Harris
Coating objects with subdivided material. F. F. Bradle Cock, Four-way
Clip for fastener for garments, binders, & T. A. Bant Closet-bowl ventilator, F. Levenhagen et a Clutch, Controller——————————————————————————————————
Compasses. J. Polask Composing-machines, Distributing mechan ism for typographical. J. Maye Compressor and pump, Centrifugal.
Concentrating process. J. W. Be, Concrete-mixer. A. J. Fisher Concrete-mold. (2 pats.). D. E. Tingles
Conducting-cord, FlexibleO. Hoffstron Contact-shoeII. T. and F. T. Jones Cooking utensilG. J. Bernau Cooking-utensil attachmentL. A. Smitl
Corking machine. BottleO. M. Moore Corking machine. BottleO. M. Woore Corset. F. T. Welton Cotton-chopper. G. W. Burton
Couch-support and spring-holder, C. B. Sitt Coupling, (Reissue,)
Couch-press feeder. C. C. Epps. Couch-support and spring-holder. C. B. Siz. Coupling. (Reissue.). C. H. Chapman Crosscutting machine. W. P. Bosworth Crucible-fnrnace or the like. W. Buess Cuff-holder. J. R. Jarrell Culvert. A. H. Kanfmann Curb and gutter finisher, Combined. Current motor and controlling device there for. Alternating- V. I. Gray Curtain-rod. A. Logsdor Cutter-head. J. R. Thomas Cutting and canterizing device. S. J. Phillips Cutting-tool. J. A. and E. Adel Cylinder-drier. E. Passburg Damper for stovepipes, furnaces, smoke stacks. Chimneys, &c. C. Bergler belivery apparatus, Counting attachment for. C. H. Lee Detail. Portable. S. W. Hayes Derrick. M. J. Sasgen Dilator. J. B. Lott Disjinfeeting device. T. Druzbach Display apparatns. J. E. Wyckleft Ditching apparatns. J. E. Wyckleft
Current motor and controlling device there for Alternating V. I. Gray Curtain-rod. A. Logsdor
Cutting and cauterizing device. S. J. Phillip- Cutting-tool. J. A. and E. Adel. Cylinder-drier. E. Passburg
pamper for stovepipes, furnaces, smoke stacks, Chimneys, &c
Detail. S. W. Hayes Derail. Portable. S. W. Hayes Derrick. M. J. Sasgen
Door-fastener E T Too
Door opening and closing device. M. H. Hari Door-stop. Door-stop. J. Johnson Door-stop. W. W. Honson
Draft-equalizer. H. E. Aastrom Drag, Road- E. J. Hickok Drill. M. L. Hanlin et al. Driving-head, Portable W. D. Sherwood
Dust-gnard. G. G. Floyd Dust-removing apparatus, Suction. H. and S. L. Whitfield Dye, Making ortho-oxymonoazo, A. L. Laska
Door opening and closing device. Door-stop. M. H. Hari Door-stop. Adjustable. W. K. Henry Draft-equalizer. H. E. Aastrom Drag, Road. F. J. Hickok Drill. M. L. Hanlin et al. Driving-head, Portable. W. D. Sherwood Dust-gnard. G. G. Floyd Dust-removing apparatus. Suction. Dye, Making ortho-oxymonoazo. A. L. Laska Dyestuff. Substantive disazo. A. L. Laska Egg-handling device. P. Weifenbach Egg-hatching apparatus. W. Bachmann Elastic wheel. J. C. MacLachlan Electric-circuit-controlling system. Electric furnace. J. W. Brown Electrical testing device. C. A. Hetherington Electrical treatment of liquids and semi- liquids. Apparatus for the. V. M. Wright Electrolytic cell. T. Griswoid, Jr. Electrolytic cell. T. Griswoid, Jr. Electrop-loading machines. &c. Enveiop- feeding mechanism for. Expansible bit. T. E. Pope Explosive. N. Ceipek Eye-shield. R. Malcom Eye-shield. R. Malcom Eye-shield. R. Malcom Eye-shield. R. Malcom ary mandrel to form an unwoven. E. D. C. Bayne et al. Fatty-acid compounds, Manufacturing new
Electric furnace. J. W. Brown Electric meter. G. E. Stevens Electrical testing device. C. A. Hetherington Electrical treatment of Novike and comi
liquids. Apparatus for the Y. M. Wright Electrolytic cellT. Grisword, Jr. ElevatorM. E. Neenan Engine cross-headR. W. Erwan
Envelop-loading machines, &c., Envelop- feeding mechanism for
Explosive. N. Ceipek Eye-shield R. Malcom Eve-te-ting machine. J. Savoie Fabric, Automatic machine for laying ad-
hering cords or threads upon a station- ary mandrel to form an unwoven
organic
making same, Earth-alkali salts of dilodo
Feed-water heater. (3 pats.)
Sence stretcher, WireJ. B. Baukson Serry-slips, Protection for rackwork of F. W. Bacon
Cilaments for incandescent lamps, Manufacture of
facture of C. P. Steinmetz ile, Bill- J. E. Benjamin ile-cabinet. F. G. Lockwood ilter container, Pressure- C. W. Mervill iltering apparatus G. Johnston
'ire-alarm system
irearm
catching F. W. Finch

Fly or insect catcher Fly-trap.	1 11
Flystrap. Flying-machine Floor-scraper. Flow-motor and valve open	C. H. Cornelli
Flow-motor and valve open	ated there w
Flush-receptacle. Folding box. Folding box. Food compound.	.W. J. Newto.
Food compound. Food products, Apparatus to	J. II. Block or trepscripg
Food product, Preserved	T. Edwards
Fruit-picker's receptable	E. Karalowicz
Food compound. Food products, Apparatus p Food product, Preserved. Forms, Manufacturing garm Fruit-picker's receptacle. Fnuncl and measure, Comb Fnrnace	ined
FurnaceII. A. Pol FurnaceII.	openhusen et a). A. Poppenhusen W. McClayo
Furnace for melting metals like	, glass and the
Furniture, Convertible Furrow-opener Garden-tool	B. Riddle W. Perkins
Garment and hose supporte	r. Combination E. C. Durand
Furnace. II. A. Pol Furnace. II. Furnace. II. Furnace for melting metals like. Furniture, Convertible. Furnow-opener. Garden-tool. Gaument and hose supporte Gas-engine. Gas-light, Inverted incande-	J. T. Cowle
- Gas-meters, Gas-saving atta	tchment for
Gear Capped	L. J. Hayden
Gearing, Change-speed Gearing, Making sheet-meta	L. A. Peterson L. A. Johnston
Gearing, Yieldable	. R. L. Wilhelm
Gin-saw cleaner. Glass-fastener. Glass-working machine	F. L. Kelley A. Godfrey
Goggles, Refracting telescop Gold, Treating ores contain	ic J. O. Denman
Grain cleaning and damping	T. B. Crowe
Charles James	.A. Beck et al.
Grate-drying apparatus. Grate-shaker. Guano-distributer. Hammer-drill. Hanger. Harness. Harness-suspending device Harrow Harrow draft-equalizer.	II. Benton .W. J. Simpson II. W. Spencer
Hammer-drill. Hanger.	W. Prellwitz
Harness Harness-suspending device	H. C. Graybill
Harrow connectionW. M. Harrow draft-equalizer	Tiernan et al.
Harrow, Riding	J. B. Hoober
Hav-loader	. W. A. Commis
Hay-press. Hand-power	\$. M. Wixel F. O. Reeves
Hay-press, Hand-power, Hay-press running-gear, Hay-rack,	S. M. Wixel F. O. Reeves H. J. Butt G. Carney
Hay-press, Hand-power Hay-press running-gear Hay-rack. Headlight attachment for a	F. O. ReevesH. J. ButtG. Carney utomobilesJ. H. Adams icles.
Hay-press, Hand-power, Hay-press running-gear, Hay-rack, Headlight attachment for a Headlight-controller for veh C. E. and Headlights, Automatic adjus	
Harrow connection. W. M. Harrow draft-equalizer. Harrow, Riding Hat-pin. Hat-pin holder. Hay-loader. Hay-press. Hand-power. Hay-press running-gear. Hay-rack. Headlight attachment for a Headlight, Automatic adjust Heating and ventilating sys. E.	
Hay-press, Hand-power, Hay-press running-gear, Hay-rack, Headlight attachment for a Headlight-controller for veh C. E. and Headlights, Automatic adjus Heating and ventilating sys E. Heating system, Heating system.	
Hay-press, Hand-power, Hay-press running-gear, Hay-rack, Headlight attachment for a Headlight-controller for vehC. E. and Headlights, Automatic adjus Heating and ventilating sys E. Heating system.	S. M. Wixel F. O. Reeves H. J. Butt G. Carney utomobiles J. H. Adams icles A. M. Walters ting means for J. P. McElliott tem. Y. Breck et al I. Cowles R. L. Gifford Gifford et al L. Andrews H. Unger
Hay-press, Hand-power, Hay-press running-gear, Hay-rack, Headlight attachment for a Headlight-controller for veh. C. E. and Headlights, Automatic adjust Heating and ventilating system. Heating system. Heating system. R. I. Heel. Hemstitching-machine. High-water alarm. Electric. Hoist.	
Hay-press, Hand-power, Hay-press running-gear, Hay-press running-gear, Hay-rack, Headlight attachment for a Headlight-controller for vehC. E. and Headlights, Automatic adjus Heating and ventilating sys E. Heating system, Holel, Hemstitching-machine, High-water alarm, Electric, Hoisting apparatus and p therefor,	
Heating and ventilating sys Heating system. Heating system. Heating system. R. I. Heel. Hemstitching-machine. High-water alarm. Electric. Hoist. Hoisting apparatus and p therefor. Hook. Hoop-driver. Horn for use on motor-car	tem
Heating and ventilating sys E. Heating system. Heating system. Heating system. Heating system. Helel. Hemstitching-machine. High-water alarm, Electric. Hoist. Hoisting apparatus and p therefor. Hook. Hoop-driver. Horn for use ou motor-car	tem
Heating and ventilating sys E. Heating system. Heating system. Heating system. Heating system. Helel. Hemstitching-machine. High-water alarm, Electric. Hoist. Hoisting apparatus and p therefor. Hook. Hoop-driver. Horn for use ou motor-car	tem
Heating and ventilating sys E. Heating system. Heating system. Heating system. Heating system. Helel. Hemstitching-machine. High-water alarm, Electric. Hoist. Hoisting apparatus and p therefor. Hook. Hoop-driver. Horn for use ou motor-car	tem
Heating and ventilating sys E. Heating system. Heating system. Heating system. Heating system. Helel. Hemstitching-machine. High-water alarm, Electric. Hoist. Hoisting apparatus and p therefor. Hook. Hoop-driver. Horn for use ou motor-car	tem
Heating and ventilating sys E. Heating system. Heating system. Heating system. Heating system. Helel. Hemstitching-machine. High-water alarm, Electric. Hoist. Hoisting apparatus and p therefor. Hook. Hoop-driver. Horn for use ou motor-car	tem
Heating and ventilating sys E. Heating system. Heating system. Heating system. Heating system. Helel. Hemstitching-machine. High-water alarm, Electric. Hoist. Hoisting apparatus and p therefor. Hook. Hoop-driver. Horn for use ou motor-car	tem
Heating and ventilating sys E. Heating system. Heating system. Heating system. Heating system. Helel. Hemstitching-machine. High-water alarm, Electric. Hoist. Hoisting apparatus and p therefor. Hook. Hoop-driver. Horn for use ou motor-car	tem
Heating and ventilating sys E. Heating system. Heating system. Heating system. Heating system. Helel. Hemstitching-machine. High-water alarm, Electric. Hoist. Hoisting apparatus and p therefor. Hook. Hoop-driver. Horn for use ou motor-car	tem
Heating and ventilating sys Heating system. Heel. Hemstitching-machine. High-water alarm, Electric. Hoist. Hoist. Hoisting apparatus and p therefor. Hook. Hoop-driver. Horn for use ou motor-car look. Hobel-lock, emergency-cylind Hub. Wheel- Lec-cream-cone machines. I holding and delivering batt Ice-cutting machine. Igniter. Incubator-alarm. Ingot. Ingot. R. B. Injector Injector-burner. Inking appliance Insect-trap. Internal-combustion engine. Internal-combustion engine. Internal-combustion engine. Jar-closure. Jewel-setting tool.	tem
Heating and ventilating sys Heating system. Heel. Hemstitching-machine. High-water alarm, Electric. Hoist. Hoist. Hoisting apparatus and p therefor. Hook. Hoop-driver. Horn for use ou motor-car look. Hobel-lock, emergency-cylind Hub. Wheel- Lec-cream-cone machines. I holding and delivering batt Ice-cutting machine. Igniter. Incubator-alarm. Ingot. Ingot. R. B. Injector Injector-burner. Inking appliance Insect-trap. Internal-combustion engine. Internal-combustion engine. Internal-combustion engine. Jar-closure. Jewel-setting tool.	tem
Heating and ventilating sys Heating system. Heel. Hemstitching-machine. High-water alarm, Electric. Hoist. Hoist. Hoisting apparatus and p therefor. Hook. Hoop-driver. Horn for use ou motor-car look. Hobel-lock, emergency-cylind Hub. Wheel- Lec-cream-cone machines. I holding and delivering batt Ice-cutting machine. Igniter. Incubator-alarm. Ingot. Ingot. R. B. Injector Injector-burner. Inking appliance Insect-trap. Internal-combustion engine. Internal-combustion engine. Internal-combustion engine. Jar-closure. Jewel-setting tool.	tem
Heating and ventilating sys Heating system. Heel. Hemstitching-machine. High-water alarm, Electric. Hoist. Hoist. Hoisting apparatus and p therefor. Hook. Hoop-driver. Horn for use ou motor-car look. Hobel-lock, emergency-cylind Hub. Wheel- Lec-cream-cone machines. I holding and delivering batt Ice-cutting machine. Igniter. Incubator-alarm. Ingot. Ingot. R. B. Injector Injector-burner. Inking appliance Insect-trap. Internal-combustion engine. Internal-combustion engine. Internal-combustion engine. Jar-closure. Jewel-setting tool.	tem
Heating and ventilating sys Heating system. Heel. Hemstitching-machine. High-water alarm, Electric. Hoist. Hoist. Hoisting apparatus and p therefor. Hook. Hoop-driver. Horn for use ou motor-car look. Hobel-lock, emergency-cylind Hub. Wheel- Lec-cream-cone machines. I holding and delivering batt Ice-cutting machine. Igniter. Incubator-alarm. Ingot. Ingot. R. B. Injector Injector-burner. Inking appliance Insect-trap. Internal-combustion engine. Internal-combustion engine. Internal-combustion engine. Jar-closure. Jewel-setting tool.	tem
Heating and ventilating sys Heating system. Heel. Hemstitching-machine. High-water alarm, Electric. Hoist. Hoist. Hoisting apparatus and p therefor. Hook. Hoop-driver. Horn for use ou motor-car look. Hobel-lock, emergency-cylind Hub. Wheel- Lec-cream-cone machines. I holding and delivering batt Ice-cutting machine. Igniter. Incubator-alarm. Ingot. Ingot. R. B. Injector Injector-burner. Inking appliance Insect-trap. Internal-combustion engine. Internal-combustion engine. Internal-combustion engine. Jar-closure. Jewel-setting tool.	tem
Heating and ventilating sys Heating system. Heel. Hemstitching-machine. High-water alarm, Electric. Hoist. Hoist. Hoist. Hoisting apparatus and p therefor. Hook. Hoop-driver. Horn for use ou motor-car liber. Hotel-lock, emergency-cylind Hub. Wheel- Left. Lec-cutting machine. Incorream-cone machines. I holding and delivering batt Ice-cutting machine. Inguiter. Incubator-alarm. Ingot. R. B. Injector. Injector-burner. Inking appliance. Insect-trap. Internal-combustion engine. J. H. I Internal-combustion engine. Jar-closure. Jewel-setting tool. Jar-closure. Jewel-setting tool. Jar-closure. Jewel-setting tool. J. Krie Journal-box. J. Kife. Knife. Knife. Knife. Ladder, Folding step. Ladder, Folding step. Lamp, Opirigible antomobile- Lamp, Dirigible antomobile- Lamp, Miner's Lamp, Pocket- Lamp, Pocket- Lamp, Carbid- Lathe-bundler. Lathe-bundler. Lathe-for producing rurned step. Lathe-for producing rurned step.	tem
Heating and ventilating sys Heating system. Heel. Hemstitching-machine. High-water alarm, Electric. Hoist. Hoist. Hoist. Hoisting apparatus and p therefor. Hook. Hoop-driver. Horn for use ou motor-car liber. Hotel-lock, emergency-cylind Hub. Wheel- Left. Lec-cutting machine. Incorream-cone machines. I holding and delivering batt Ice-cutting machine. Inguiter. Incubator-alarm. Ingot. R. B. Injector. Injector-burner. Inking appliance. Insect-trap. Internal-combustion engine. J. H. I Internal-combustion engine. Jar-closure. Jewel-setting tool. Jar-closure. Jewel-setting tool. Jar-closure. Jewel-setting tool. J. Krie Journal-box. J. Kife. Knife. Knife. Knife. Ladder, Folding step. Ladder, Folding step. Lamp, Opirigible antomobile- Lamp, Dirigible antomobile- Lamp, Miner's Lamp, Pocket- Lamp, Pocket- Lamp, Carbid- Lathe-bundler. Lathe-bundler. Lathe-for producing rurned step.	tem
Heating and ventilating sys Heating system. Heel. Hemstitching-machine. High-water alarm. Electric. Hoist. Hoist. Hoist. Hook. Hoop-driver. Horn for nse ou motor-car Hotel-lock, emergency-cylind Hub. Wheel- Lee-current machines. Inco-cream-cone machines. I holding and delivering batt Ice-cutting machine. Igniter. Incubator-alarm. Ingot. R. B. Injector. Injector-burner. Inking appliance. Insect-trap. Internal-combustion engine. J. H. I Internal-combustion engine. Jar-closure. Jewel-setting tool. C. Krie Journal-box. J. Kinematographic bands. Man Kite. Knife. Ladder. Lath-bundler. Lath-bundler. Lath-bundler. Lath-bundler. Lather or producing turned. sparticles of regular or irregular	tem
Heating and ventilating sys Heating system. Heel. Hemstitching-machine. High-water alarm, Electric. Hoist. Hoist. Hoist. Hoisting apparatus and p therefor. Hook. Hoop-driver. Horn for use ou motor-car liber. Hotel-lock, emergency-cylind Hub. Wheel- Left. Lec-cutting machine. Incorream-cone machines. I holding and delivering batt Ice-cutting machine. Inguiter. Incubator-alarm. Ingot. R. B. Injector. Injector-burner. Inking appliance. Insect-trap. Internal-combustion engine. J. H. I Internal-combustion engine. Jar-closure. Jewel-setting tool. Jar-closure. Jewel-setting tool. Jar-closure. Jewel-setting tool. J. Krie Journal-box. J. Kife. Knife. Knife. Knife. Ladder, Folding step. Ladder, Folding step. Lamp, Opirigible antomobile- Lamp, Dirigible antomobile- Lamp, Miner's Lamp, Pocket- Lamp, Pocket- Lamp, Carbid- Lathe-bundler. Lathe-bundler. Lathe-for producing rurned step.	tem

Limb, Artificial	nce I
Line-spacing mechanismC. SI Liquid-separator, CentrifugalH. Feldme Liquids, especially milk, Apparatus	eier I for I gel I
Localing device. J. E. McC	ray der I
heating. J. Flie Loading device. J. E. McC Locomotive. Electric. A. F. Batchel Log-debarking apparatus. G. Schenck, Loom picker-check. S. Wilkiu Looms, Hopper for filling-repleuishing.	Jr. I son l
Looms, Hopper for filling-replenishingJ. North	I
Looms, Hopper for hing-repictushing J. Novth Libricator	zies I dor of I
buildings, Device for delivering	I nen
Mail-bag catcher and deliverer	al. \$
	THE C. S.
Mail-bag receiving and delivering apparator railway-carsC. W. Broughton et	al, ş
Malt-kiln C. W. Broughton et Malt-kiln P. Wessin	al. ş iger ş
Match, (5 pats.)J. A. E. Crisv Match-boxV. T. and H. E. M	vell s
Matches, Making. J. A. E. Crisv Matches, Making. J. A. E. Crisv	vell
Mattress-spring-stretching device.	vell
for railway-cars. C. W. Broughton et Mail-receiving apparatus. (W. Broughton et Malt-kilm. P. Wessin Match. (5 pats.) J. A. E. Crisv Match-box. V. T. and H. E. M. Match-box. M. P. Broughton et Matches, Making. J. A. E. Crisv Matches, Making. J. A. E. Crisv Matches, Manufacture of. (2 pats.). Mattress-spring-stretching device. J. C. Gal Measuring and recording device. Profile. Measuring apparatus, Liquid H. L. Measuring-tool, Combination. P. A. Cu Meat-tenderer. A. S. Bull Metabolizer. J. vou der Kamm Metal box. H. H. Armstrong et Metal from blast-furnace dust. Apparatus Metal from blast-furnace dust.	van 3
Measuring apparatus, LiquidII. L. Measuring-tool Combination P. A. Cu.	ane ş rtin s
Meat-tenderer. A. S. Bull Metabolizer. J. you der Kam	lock met
Metal box	al. y
Motal harting furnee F J	Ker Sice
Metal, Process of and apparatus for twing molten. S. S. Dee Metal-studding clip. T. Col Metals from their oves, Electrolyticaly	mer lins
Metals from their oves, Electrolytically tracting	at- mie
metals from their ores, Electrolytically tracting. W. D. Rei Metalurgic apparatus W. H. Pic Microbe cultures into bottles or other sels. We me for introducing.	ves-
Microbe cultures not bottles of other sels, Means for introducing	my for
testingJ. W. Mitchell et Milk purifying and homogenizing mad	al. iine
Milling machine, MultipleA. Ver Mistheonding device	ruet runn
Milk purifying and homogenizing machine. II. II. Str. Milling machine, Multiple A. Ver Misthreading device J. North Mixing-machine T. L. Bran Moccasin, Dust S. E. Wir Motor J. W. I. Wotor-control system W. II. Po-	nen ltse
MotorJ. W. I. Motor-control systemW. II. Po	well
Music-stand, Theased tenscopie	isou sher
Motor	bell dall
Oil-switch	Jr.
Ore-concentrator. H. E. Ores Treating I. A. Brade	arle lock
Oven, Baker'sJ. Cl. Ozone-producing apparatusC. D. Med	rey
Optical instrument. E. J. Br Ore-concentrator. H. E. Ores, Treating. I. A. Brade Oven, Baker's. J. Cl. Ozone-producing apparatus. C. D. Me- Packing or shipping box. J. E. Clenny e Packing-rings, Apparatus for the maun- ture of. J. P. Gant Padlock. T. O. Paper-storage box. Sensitized-, G. C. Br Paper-tube-forming machine. M. Schu	t al. fac- hier
Padlock. T. O. Paner-storage box, SensitizedG. C. Br	о <i>м.</i> п Дос
Danny records. Apparatus for manufac	fure
of E. Z. Ta Peu feed-valve, Fountain	,,,, man
Pen, Fountain	ood olley
Photographic developing and fixing ap atusF. A. Parki	par- mire
Photographic prints, &c., Device for moting E. L. St	mith
Pen, Fountain- G. H. Heindsel Percolator. J. R. He Photographic developing and fixing ap atus. F. A. Parki Photographic prints, &c. Device for mo ing. E. L. So Piano-action. R. M. Hutchi Piano-players, Controlling device for p matic. H. S. Horn Picker-stick check. A. E. Rho Pigment and making same, Inhibitive	nen- beck
Picker-stick checkA. E. Rho Pigment and making same, Inhibitive	ades
Pill-machine. F. M. Edw	ards t al.
Pipe-fishing tool. E. Sei Pipe-fitting J. H. Lon	ibert skey
Piston for macaroni-presses, Solf-seat	mg occio lines
Planter, PeanutJ. R. A. Planter, PeanutC. S.	yers Spiro
Plow drag attachment. J. E. Bu	ntosh nrton
Plow-jack	(P50H (T088
Plowing and harrowing machine, Reautomobile. E. M. Quelle	otauv nnec
Printing apparatus, SignD. K Printing-meterF. F. Ki	nney Kerr
Propelling apparatus. Bow-facing ually-operated boatA. G. Chan	man- idron
Propelling device, IntermittentW. II. Pruning implement, Lineman'sC. M. T.	Voss aylor
Pulverizing-mill	nonu liams rtnev
Picker-stick check. A. E. Rho Pigment and making same, Inhibitive A. S. Cush Pill-machine. F. M. Edw Pipe coupling, Train- D. W. Moss e Pipe-fishing tool. E. Sei Pipe-fishing tool. E. Sei Pipe-fishing tool. F. A. Marte Piston for macaroni-presses, Self-seat F. A. Marte Pitman, G. C. Spel Planter, Peanut- J. R. A. Piaten-shifting mechanism. C. S. Plow. D. J. Mehr Plow drag attachment. J. E. Re Plow-jack. C. J. Thom Plow-jack. C. J. Thom Plow-lift, Antomatic steam and lever. ———————————————————————————————————	ensek Keller
Pump, Heat-actuated gasC. A. And Pump-plunger, Self-lubricatingG. W.	erson Baird
Pump, RotaryA Four Pump, TurbineW. L. For Four Published Pumps of the Pu	rmer ward Scott
Rail clamp, Guard G. M. Rail clamp, Guard J. G.	Ervin Wolfe
Rail-joint. L. H. S. Rail-joint. Compromise. J. H.	Allen Allen
Pump-plunger, Self-lubricating, G. W. Pump, Rotary. A. For Pump, Turbine- W. L. For Rack-lifter. E. J. Rail clamp, Guard- G. M. Rail clamp, Guard- J. G. Rail-joint. L. H. S. Rail-joint, Compromise. J. H. Railway-crossing. J. A. W. Railway-foint. R. N. W. Railway-rail. G. P. S.	alton Smith
ARREST RECOVERS TO THE PROPERTY OF THE PROPERT	

Railway-road-bed construction	Thi Tie
Railway-road-bed construction	Tir Tiv Tir
	Tir Tol
Ringing-key or switch, Operator's selective	Tol Tol
Receptacie. Missen M. Janisen Retrigerator. R. E. Joyce Ringing-key or switch, Operator's selective W. W. Dean Roads, pavements, &c. Making I. Lassailly Rotary gas-engine. F. D. Thomas Pudder and brake for ships. Combined any	Too
Sad-fron heaterJ. B. Gorgen	To:
Safety-pin. G. Soderberg Salt from brines by evaporation, Maunfacturing. S. M. Lillie Sapphires, Producing synthetic. A. V. L. Verneuil Such chain factorer. J. L. Coopey	Tr: Tri
Sasif-chath rastenet	Tri Tro Tro
Sash-pivot. F. Rausch et al. Saw-tool. J. S. Cotter Saw-tooth shaper. W. G. Wilms	Tr
Sash-lock. P. J. La Belle Sash-pivot. F. Rausch et al. Saw-tool. J. S. Cotter Saw-tooth shaper. W. G. Wilms Sawing machine, Wood- J. B. Scheck Scale. J. O. Harmon Scale, Recording- W. T. Bovie Sconriug-machine. J. Hemmer Scow, Saud- E. D. Callen Scow, Saud- E. Ellistt	Tu Tu Tu
	Tu Tw Ty
Screening and picking apparatusJ. Dodds	Ту
Seal, Snap	Ty Ty Ty
Screw hmit-gage. J. Banquand Scrubber. A. D. Lee Seal, Snap E. J. Brooks Sealing and stamping machine, Envelop I. Robbins Seed conveyor, Cotton W. N. James Self-oiling wheel. G. H. Merwin Semisteel and the product thereof, Making Sewing-machine for finishing buttonholes. C. A. Dahl et al. Sewing-machine motor mechanism.	Ty Ty Ty Ty
Sewing-machine for finishing buttonholes	Tin
Sewing machine, FurF, B. Miller, Jr. Sewing-machine motor mechanismR, F. Howard Shade bracket, WindowD, F. McCarty	l'r Va
Shaft-conpling. J. Hormby Shaper. C. D. Gibsou et al. Sharpeuer. Razor- A. A. Aydt Sharpening device. J. W. Crabill Sharpening machine, Razor-blade- F. L. Rains	Va Va Va Va
Sharpening device J. W. Crabill Sharpening machine, hazor-blade E. I. Rains	Va Va
Shipping-case Reinforced J O Noble	$\frac{V_{\epsilon}}{V_{0}}$
Shock-absorber. F. A. Lyuch Shock-absorber P. M. Freor Shoc. P. C. Nieman Shoc. G. P. Mitchell Shoc-machine. J. J. Richardson	- Υ∈ - Υ∈ - ∇∈
Shoe-poilsing machine	Ve
Shredder-feeder. J. B. Schuman Shrouds, Neck attachment for G. Tester Shuttle-eye, Threading R. A. Taylor Sign. R. G. Jenekes	11.
Signal-transmitter J McFell	TI.
Signaling means, Electric. A. J. Allard Siphoning fluid. R. W. Davies Skate, Water J. Longwell Skimmer, Boiler B. E. Foss	11. 11.
Skimmer, Boiler	11.
Slush-feeding apparatusJ. C. Diebold Sole molding and other piercing apparatus F. Powell Spinuing and the like machines. Doffer-	11. 11. 11.
guard and oil-well cover for spindle-sup- ports for	W.
Spindle-support for, (2 pats.)	TI TI
Sprayer. C. L. Chester Spur. F. C. Monier Spur for driving-reins. M. L. Sund Square, Folding. A. J. Grissom	II
Stairway construction. J. Oman Stamp, Dating- J. Blitz Standard. P. O. Hatfield Steam, Apparatus for generating and con-	11
Steel ingors and plates, Manufacture of combined. C. T. Torsell Steel, Manufacture of J. H. Gray Steel Manufacture of S. S. Wales	A A
Steel, Mannfacture of. S. S. Wales Steering-gear. C. E. Marquette Stoker, Mechanical A. R. Selden Stokers, Mechanical movement for auto- matic. W. McClave	A A
Stove	A A A
Stovepipe-fastener J. L. Bartels Strainer T. H. and L. L. Dilger Strap and fastener J. R. Hamilton Straffing lever Apparatus for prepaying	A A A
Strainer	A A
bers C. Vallone	A A A
Switch A. Groves Switch G. W. Hart	A
Switch-operating mechanism. J. A. Walker Switchboard. T. A. Hammond Syringe. V. W. Piper	
Switch-lock	I
Telegraphy	Î
Telescope. C. Moller Temperature-regulator, Clinical- R. F. Schneider Tide or wave operated motor. C. C. Atkinson	I I
	. 1

	_
Thread-guideI. E. Palmer Tie-plate and braceJ. B. R. Counts Fire, CushionA. W. Shauk Tive, CushionD. L. Thayer Fire-protecting armor, Pneumatic W. R. Malcolm Tive, ResilientC. A. Fox Fobacco packing and shipping box, Leaf F. L. Short et al. Fobacco-pipeJ. R. Perry Fobacco-nineD. Payton]
tre, Cushion	1
Tive, Resilient	
Tobacco-pipe J. R. Perry Tobacco-pipe D. Payton	:
Fobacco-pipe. D. Payton Footh-paste, Dispensing. G. A. Madison Footh-powder container. A. F. Hetherington For and hung-tester W. Zolper	
Tooth-powder container. A. F. HetherIngton Toy and lung-tester W. Zolper Toy vehicle, Reciprocating C. M. Bavtholomew C. M. Bavtholomew Trains, Device for delivering written orders and messages to moving trains L. V. Thayer Trap A. Fanls Triangle, Drafting R. Saas Trick-box A. A. Heidtmaun Trombone, slide L. S. Shield Trousers-belt fastener J. Neum Truck, Car H. C. Buhoup Truck, Car H. C. Buhoup Trucks, Engine-support for car Tube construction R. R. Ellis Turbo-displacement eugine L. H. Nash Turn-table J. Strange Type-bar mechanism C. Spiro	
Trains, Device for delivering written orders and messages to moving trains, L. V. Thayer	
Trap. A. Fanls Triangle, Drafting. R. Saas Triak-boy A. A. Heidtmann	
Trombone, slideL. S. Shield Trousers-belt fastenerJ. Neum	
Truck, Car	
Tube construction. W. H. Henderson Turbine Elastic-fluid. C. R. Walter	
Turbo-displacement eugineL. H. Nash Turn-table	
Type-containing channels, holder for	
Type-writing machine	
Type-writing machine. J. S. Stewart Type-writing machine. C. P. Mosher	
Type-writing machine	
ically indicating the approximate number of words and other characters written by	
Umbrella, &c., holder, H. C. Engelberg Umbrella-locking deviceJ. R. Barnes, Jr. Vacuum-clemers, Punning mechanism for	
Vacuum cleaniug apparatus, P. W. Parker	
Umbrella, &c., holder H. C. Engelberg I'mbrella-locking device J. R. Barues. Jr. Vacuum-cleaners. Pumping mechanism for Vacuum cleaning apparatus P. W. Parker Valve J. W. and E. H. Smith Valve J. J. McCurry Valve L. J. McCurry Valve. Check J. W. Cumley Valve mechanism for explosion-engines C. R. Greuter Valve mechanism for regenerative furnaces L. N. McDouald Vehicle A. E. Long Vehicle C. Escalante et al.	
Valve mechanism for regenerative furuaces L. N. McDouald	
Vehicle. A. E. Loug Vehicle. C. Escalante et al. Vehicle, Self-propelled. A. Liwenthal	
Vehicle-spring. A. R. Selden Vehicle-spring. A. R. Selden Vending-machine, Automatic. (2 pats.) R. B. Craig et al. Vessels, Method of and means for raising	
Vessels, Method of and means for raising or repairingJ. F. O'Rourke Voltage controller, MultipleH. W. Cheney	
Washing-machine. W Webber Watch-balance. J. A. Petra	
Washing-machine. J. W. Vines Washing-machine. W. Webber Watch-balance. J. A. Petta Water-heater, Gas. M. Itamassot Water-unotor. J. B. Norton Water-motor, Balanced. P. T. Dodson Water-tank for fowls. P. H. Hernden Wave apparatus. Automatic, R. M. Mobins Weight, praisitoring and recording mechan-	
Water-tank for fowlsP. H. Hernden Wave apparatus. Automatic.R. M. Mobius Woodsht registering and recording mechan-	
ism for refrigeratorsJ. V. Mitchell Wells, Heaving-plug for oilE. N. Moor	
Wave apparatus. Automatic.R. M. Mobins Weight registering and vecording mechanism for refrigerators. J. V. Mitchell Wells. Heaving-plug for oil. E. N. Moor Wheel. J. A. Laudis Windmill. S. Hoffey Window-lift look and holder. C. D. Spates Window-lift look and holder. C. D. Spates Window-washing machine. R. B. Shryock Wire clothes-line. C. M. Martin Wire-entting machine. M. W. Lewis Wire-stretcher J. V. Longan Wrench. C. W. Horstman Wrench. C. W. Horstman Wrench. C. N. Pollock Writing machine, Syllable. C. Winterling Writing machine, M. F. C. Stockman	
Window-washing machine. R. R. Shryock	
Wire children with the children wire children wire children wire stretcher. M. W. Lewis Wire-stretcher. J. V. Longan	
Wood, Treating. R. Koenman Wrench. C. W. Horstman Wrench. C. X. Pollock	
Writing machine, SyllableC. Winterling Writing materialM. F. C. Stockman	
Issued April 4, 1911.	
MECHANICAL PATENTS. Adding machine H. L. Fisher et al.	
Adding-machineH. L. Fisher et al. Aerial navigationJ. K. Toles Aeroplane-launching deviceE. Wilson	;

Aerial navigationJ. K. Toles
Aeroplane-launching deviceE. Wilson
Aerial Havigation
Air-brake mechanismF. S. Cravens
Air-compressor
Air-cooling apparatusF. Wittenmeit
Air-pressure indicatorH. W. Walker
Alarm device
Alarm deviceV. J. Niele
Alarm system, SprinklerA. Goldstein
Ammonium phosphate, Making primary
Ammontum phospitate, Making frimation.
Amusement apparatus. J. W. Hammett
Amusement apparatus
Anode-mold
Antisiphoning trapA. M. Morrison
Antislipping deviceR. Arthurs
Arch-supporterr. W. Kreen et al.
Arch-supporterF. W. Krech et al. Ash-trapS. F. Myers Automobile pivot-lightH. C. Fraudsen Automobile wheel and hubC. Reynolds
Automatic reel for Wire, &c. A. W. Starck
Automobile pivot-lightH. C. Fraudsen
Automobile wheel and hubC. Reynolds
Automobiles Shorl-circulture lucking ut-
VICE TOP
Ralance sheet and holder, Depositor's trun-
Engnerg
Rall-cage
Dalloon etimeture I Schille
Bank, registering- S. F. Estell Basket. W. B. Raymond
Basket
Batteries, Oxid plate for primary
J. W. Gladstone
Batteries, Oxid plate for primary J. W. Gladstone Battery-box
Rearing Roller side
Beater-toothJ. S. Kemp

				- The Village III - Land		
Ве	dand	eouch.	Daven	portI	р. т. о	wen
ве	a and	parlor	snit, C	Combinat T. J.	ion Shea e	t al.
Ве Ве	a, Day d. Sof	reuport. a	• • • • • • •	P.). T. 0 E. Kro€	wen ehler
Ве	er-pipe 	e-cleanir	ıg appa 	ıratus J. J.	Ryan e	t al.
Be Bil	lt-shift Hiard-c	ter, Saf ene	ety	J. V.	D. Wel Borro	orlin oghs
- Bl	neksmi oek-mo	ith's sn ild tam	pport per	S.	O. Due MeH	mler ench
Bo Bo	at, Si ok. P	ıbmarin reminm	e	R. I	O'Equev . E. D	illey avis
$_{\rm Bo}$	oks. C	ʻasing-ir	n mach	ine for	L No	
Bo Bo	ot and	d shoe. ling ma	chine.	H.	М. На	usen
Be	ttle	Xon-refi	llable	R.	Pfaff e	t_al. Veno
Bo Bo	ttle. N	Xon-refil Xon-refi	llable	C. B.	Davis e	t al.
Bo Ro	ttle. I	Non-refi	llable	hrush	G. V. S	Stein
Re				. F. W.	R. Brad	lford
Bo	X	 maabii		H.	N. Lin	ncoln
Bu	ake	-macm		······································	P. H	allot
Bi	ake-be	adu adhania		P. '	ř. Han	diges
Bi	ick. I	Burning.	m, ru	J.	Q. Bei	nett
Bi	rages. 'ooder.	Tinars	10r	J. B	Thom	pson
Bi	usn a ush, l	ud broc Rotary			.R. Ra	dinse Deiz
Bu	ickie ickle,	Cross-l	ine	J. V	V. MeX	Inrry
Bi	 	purpos	ses, Met	port I Combinat	H. F	erree
B)	πιτο11-1 1†ton-1	naking	machir	e G. ieE. F.	T. Lund	quist
Ca Ca	unnet. dipers			I	A. M	uzzio
C	ui ope	ung u	d closi	ug devic ries, Cou F. H. Sel W.	e L. Hor	wath
Ca	uivas treatii	and otl 1g	ier fabi	ries, Cou M.	apositio A. Re	n for essig
C:	ur ur-brac	·e		F. II. Sci	X. Mal hunemai	ocsay n, Jr.
C; C;	ur, Du ur-dum	mp ping n	nechani	W.	A. Car	swell
C	ar. Ra	ilway	F.	C. and .	0, V. G L. Sch	reene wartz
C C	ar-roof ar saf	ety att	achmen	c. and C. and C. C. t, Railw	.J. Pe	arson
C	ar sigr	ial, Rat	lway	C R	. E. Su . C. Sw	llivan eenev
C.	ar-whe	eel and orner-la	brake- dder fo	shoe or railwa	.A. Wa	yeott
€°	ars. Pl	low for	uuloadi	J. A.	Keyes .C. H.	et al. Byers
C	ars. T	rack-sar	ding d	or railwa J. A. ng vice for I. E. Bi	trolley	 et al.
C	arboy- arbure	holder			С. Е. Т F. W.	orrey Stein
- 6	arbure arbure	ter			. Ы. Ј. 	Tetre Tarris
	arbure arbure	ter			.A. Ph Hardy	inney et al.
('	กษะปาบ ด	<u>-mechir</u>	16		F 1000 I	1 ST
È	arouse	l	or med	W.	H. Wi	ldrick
Ċ	artrids	ge, Elec	etric-fu	seJ	Grohe	wsky
Ċ	ash-re ash-re	gister gister	Floatri	seJ	H.	Poser
Ċ	ement	and co	ncrete	R. W. G. T	tie	оптое
C	ement	Treat	ing	.R. W.	Lesley	et al.
Ċ	hain c	onveyo	C	T	A. Co	leman
. '	raisin	s liania	ls. Lift	ing	ic spira	15 101
•	hair-b	ottom-t	urning	.H. Bes machine	Sonnet-	ravre
C	hairs.	Adjust	able a	nd disap	pearing	foot-
	rest i 'haser-	dies	CIS	haniam 1	L. F.	Hart
Ę	himue	У	ed mee.	hanisml	I. Wisl	icenus
(mp-re	mover,		y vacnu	.L. S.	Irgens
(hurns	Cover	and s	A. Strainer J. Y. ing mae A. hallW. E. E. a	retainir	ig de-
(ircuit	-breakei	. Rotai	Y	.S. T. H	Tutton
S	Teann.	novome		A	. Т. Не W Е	edfeldt Porter
l (Tocks.	Bell-ra	ick for	hallW.	J. Her	schede -
s (z (r (losure	Knoc	kdown.	E. E. a	nd G. I	Cox
) (Toth-t	reating	appara	tus	D. G	essner Rich
. (oal-bo	ox. Fam	ily		T. Eb	erman
1 (Coaste	r-brake.	and re	versible	counter	r-shaft
ç. (Coating	g objec	ts with	subdiv	ided ma	terial,
t t (appa Cockey	e rotab	le barri	versible subdiv l er-plateC.	с. н.	Noves
s i	Collar Comb	and tie	form		.C. H.	Capper
s (Comb	ease ar	id cleai	ning dev	ice, Cor	nbined Olson
n (Compa	ss. Ma	riner's.	. P. Ch	etwend	et al
S	Compr	essing-r	nachine		W. M.	Gentle Baker
n - cr	Conere Contri	te struc	tnre, R	einforce	dW. C.	Sauer Moore
+	Conver	T () 1*			H = G	Rossin
e ll a	Cooler Cooler	ug-ens	ennel	w.	W. La	ngham
e s	Corn I Cottou	aager, -ehoppe	r	F.		R. Key
p p	Cotton	-cleaner		A	. A. Za	londek

Cotton conveying and packing device
Cotton conveying and packing device G. W. Cameron Cotton-pickerA. W. Getchell Cotton tie-pressP. L. Howlett CounterI. C. Snowden Crate, Knockdown shippingG. M. Walker Cream-separator disks, Means for treating
Cotton tie-pressP. L. Howlett CounterI. C. Snowden
Crate, Knockdown shippingG. M. Walker Cream-separator disks, Means for treating
Cream-separator disks, Means for treating A. H. Voeck Crematory, Human. J. Conley Crushing-mill. T. J. Sturtevant Curb-bit. M. S. Swartzendruber Curler, Marcel-wave. A. Kretschan Current regulator, Constant. E. R. Cliff Curtain-bracket. U. L. Berger Curtain-draping apparatus. M. A. Tompkius Curtain-stretcher. J. T. Donnell et al. Cuspidor. L. Hofer
Crushing-millT. J. Sturtevant Cnrb-bitM. S. Swartzendruber
Curler, Marcel-waveA. Kretschau Current regulator, ConstantE. R. Cliff
Curtain-bracket
Curtain-stretcherJ. T. Donnell et al. CuspidorL. Hofer
Cuspidor-holderM. S. Jacobson Cuspidors, Check-valve forG. B. Cogley
Cuspidor. L. Hofer Cuspidor-holder. M. S. Jacobson Cuspidors, Check-valve for G. B. Cogley Cycles, Canopy attachment for motor H. Jolley Dark room and camera, Portable.
Dark room and camera, Portable
Depth-gageJ. Stiriss Detachable handle for suit-cases and trav-
eling-bags, &c. E. Quinn Diaphragm J. H. Kinealy
Die. W. Edmonson Display-stand. M. Engelsman
Display stand, Garment
Draft appliance, Automatic balance
Draw-bench head, Automatic, N. A. Johnson
Drill
Drill-holderA. H. Knight
Drinking-cup, Collapsible, E. H. Forney
Dreing H. Geldermann
Dyeing apparatusJ. C. Evenden et al.
Electric-circuit controllerE. J. Burke
nace
Electric machines Rotor for dynamo
Electric switch J. R. Rossignol
Electrical connectorC. M. Steiner Electrolytic interrupterH. Gernsback
Electromechanical alarm. E. Anfiero Electrotypes, Bending. E. Flower
Elevator safety deviceP. A. Dupcza Elevator safety deviceL. Gyorffy
Engine crank-cases, Cooling attachment for steam F. B. Northrop
Eugine-starterI. W. Fitzgerald Evaporating-tubeS. M. Lillie
Evaporative cooler
Dark room and camera. Portable
Explosive
Explosive-engine. E. H. Sherbondy Explosive-engine H. E. Norris
Explosive-engine C. E. Goodrich Everlasses R. Straubel et al.
Fare-box. G. B. Kohler Fastener. A. E. England
Fastener. J. H. Stillwaggon Faucet. C. A. Pride
Fastener. J. H. Stillwaggon Faucet. C. A. Pride Faucet. E. L. Thurston Faucet and valve. M. E. Joyce Feed-bag attachment. A. N. Pellant Feed-rack. T. B. Shaw Feeding and mixing device. T. L. Valerins Fence-post mold. J. H. Graham Fertilizer and making same. S. Peacock Fifth-wheel. W. J. Martin Filaments with metallic emrent-supply wires. Connecting incandescent-lamp.
Feed-bag attachment. A. N. Pellant Feed-rack. T. B. Shaw
Fence-post mold. J. H. Graham
Fifth-wheel
wires. Connecting incandescent-lamp
Film-feeding mechanism. M. Klaiber Film-spool. H. L. Hill
Eilter J Bixler
paratus forII. Shillington Fire-escape ladder, FoldingI. Poss
Fire-extinguisherW. Schwarzhaupt Floor connectioaJ. J. Donoyan
Fluid-brakeO. Lauber Fluid-pressure brakeW. V. Turner
Flushing apparatusE. L. Thurston Flushing apparatus for sewage system. Au-
tomatic. J. Scott Flushemeter. W. H. Bowman
Flying-machine. J. L. Love
Form, Dressmaker's adjutable
Filtering water, sewage, and the like, Apparatus for. II. Shillington Fire-escape ladder, Folding. I. Poss Fire-extinguisher. W. Schwarzhaupt Floor connection. J. J. Donovan Fluid-brake. O. Lauber Fluid-pressure brake. W. V. Turner Flushing apparatus. E. L. Thurston Flushing apparatus for sewage system. Automatic. J. Scott Flushemeter. W. H. Bowman Flying-machine. P. A. Watson Flying-machine. J. L. Love Foreground ray-screen. J. K. Holbrook Form, Dressmaker's adjutable. Formaldehyde compound and making same W. Osborne.
Fruit-picker. L. B. McDonald Fruit washing and polishing machine J. K. Woolslair et al. Fuel-economizer and smoke and spark consumer.
J. K. Woolslair et al. Fuel-economizer and smoke and spark con-
sumer. G. Clark Fnrnace. A. Bonilly
Furnace, A. Bouilly Furrow-opener L. T. Rasmussen Fuse-adjusting device U. Wilck Fuse, Impact K. Wieser et al.
ruse, Impact
Firse, Impact. L. Abendroth Firse-testing device, Electric. C. W. Mitchell Game apparatus. H. T. Watkins Game, Electric ball. J. F. Smiley Garbage-receptacle. C. Milgrom Garbage-receptacle. M. C. Short
Game, Electric ball. J. F. Smiley Garbage-recentagle C. Milgrey
Garbage-receptacleM. C. Short Garden and road roller A. F. S. Bohinson
Garbage-receptacle
Gas generator, AcetyleneF. W. Martin Gas-meter support or hanger
Gas generator, Acetylene F. W. Martin Gas-meter support or hanger M. A. Corbett et al. Gas-producing furnace E. von Maltiz et al.
Gas-washer, Rotary,

Gasolene-tanks, Electric low-level signal for
Gear mechanism, Variable-speed driving W. Evensen Gearing, Change-speedJ. A. Leland
Grain-purifier
Grate, Rocking. W. H. Bausch Grease-gun. C. A. Wilson Grinding-machine. F. A. Knapp
Grinding-machine
Gun, Recoil
Hame-fastenerJ. G. Overby Hand-restJ. Packewitz Harvesting machine, Potato
Hat-pin protectorW. T. Schroeder Hat-shaping machineE. T. Pollard
Head-gate
ed
Hinge. M. S. Nolan Hive-switchboard. L. A. Simmon Hoisting apparatus. J. D. Williamson, Jr. Hook and eye
Hoop-scraping apparatus, Metal- I. L. Hughes Hopper F. R. McCune
Horseshoe-calk attachment. W. E. Ward Horshoe-calk, Removable. W. H. Kern Horseshoeing-rack. E. Tessier
Hose-coupling, Automatic car-, F. G. Rux Hose-reel
Hydrocarbon-burner D. M. and R. W. Jackson Ice, Making. G. K. Davol Iguition system. T. M. Mueller Implement-holder. C. Tharp Index-tab clasp. H. P. Hamburg Inhaler. J. D. Kerr Ink from printed paper by means of bleach- ing substances baying an alkaling action
Ignition system. T. M. Mueller Implement-holder. C. Tharp Index-tab clasp. II. P. Hamburg Inhalos
Ink from printed paper by means of bleaching substances having an alkaline action. Removing printersH. Henderson et al. Ink-wellF. D. Banning
Insect-exterminator
Insole and instep-supporter, Combined W. H. Fassig Internal-combustion engine F. C. Newcomb
Insert-trap
Knob. P. Mathes Laup. Acetylene- J. Phalp
Key-ring. J. A. Prigge, Jr. Kilu. J. T. Underwood Knob. P. Mathes Ladder-bracket M. V. Rush Lamp Acetylene- J. Phalp Lamp adapted for use in brooders, incu- bators, &c. H. A. Nourse Lamp and reflector holder. A. J. Morgan Lamp, Incandescent. C. E. Campbell Lamp, Incandescent gas. M. Graetz Lamp, Incandescent gas. M. Graetz Lamp, Incandescent gas.
Lamp, Incandescent,, C. E. Campbell Lamp, Incandescent electric, M. H. Welsh Lamp, Incandescent gas, M. Graetz Lamp, Incandescent gas
Lamp, Incandescent gas
Lamps, Combined mantle-cap and burner-cene for incandescent vapor gas
Lanterns, Substitute light for antomobile. W. C. Blundon et al. Last, Interchangeable shoeT. Griffin Last, Machine for working uppers over R. F. McFeely Latch for doors and other places.
Latch for doors and other places. B. R. Crampton
Latch for doors and other places. B. R. Crampton Latch, Gate
Leather or enalogous material. Stretcher forE. C. Greulich et al. Leus system for projecting stripes
Level. F. Graul Level. W. Mier et al. Life-bnoy. C. W. Smith Limbrest. H. Bauerfeind
Limb-rest. H. Bauerfeind Liquid, Menus for separating pulverized ore or other comminuted solid matter from
Liquid, Means for separating pulverized ore or other comminuted solid matter from
Looms, Mechanical filling-detector for woft-replenishingB. F. McGuiness Looms, Wage-registering apparatus for me-
chanical S. Marschik Lubricator, (2 pats.) G. J. Bingham Mail-chute L. Errlich Wail-clevator, A. D. Archibald
Mail-elevator. A. D. Archibald Mail-elevator. S. W. Jaeger Manure-conveyor. H. Paulson Match-box. R. Feldra Match sofo. R. F. E. Mad
Measure, Computing yard., D. H. Lavne Measure, Crocer's., J. D. Willard Measuring appliance, A. Wurtzel
Measuring device, Tailor's, H. H. Gordon Metal plate, E. L. Abbott Metal surfaces, Polishing, A. Ridd Metal-working machine, C. M. Spencer
- Motale Mothod of and appayathe for troat.
ing
мик and mail box, Combination

Milking applianceJ. 4Ienrichsen et al. Mine-cage safety-brake, '. Ilansen Mine-doorN. K. Bowman Mines, Means for proppingW. Reinhard
Moiding-machine. J. Barker Mop-hoider. A P. Slack Mortar and concrete mixer. F. E. King Mouthpiece. L. Steinberger Musical instrument, Self-playing
Mutoscope B. Smith Navigation, Instrument for use in
Milking applianceJ. Henrichsen et al. Mine-cage safety-brake
Ore-concentrating table. E. A. Wall Ore-crusher. E. A. Wall Ore-crushing machine. II. C. Quick Ore roaster, Tale G. A. Stanton Ore-treating apparatus. I. A. Braddock Ore-treating apparatus. E. B. Goodwin Ores, Concentrating. W. M. Sanders Oven, Electrically-heated. F. I. Cook Overhead carrier. J. G. Lund Oxids, Obtaining solutions or quasi solu- tions of certain metallic. Z. Cartwright Oysters and other mollusks, Treating
Oiler, Wheel-flange
J. Goddard Pictorial firmamental machine. O. P. Jones Pins, clasps, &c., Safety attachment for L. H. Johnannes Piston. N. A. Christensen Plant-bed burner. C. T. Campbell Plant-support. H. D. Robinson Planter, Garden-seed. J. Balint Pliers. W. A. Peck Plow. G. Spalding Plow. R. S. Bates Plow lifter. W. N. Procknow Plow or cultivator, Siding. N. B. Dixon
Frow or cultivator, SidingN. B. Dixon

Plowing and otherwise cultivating read, Implement for,, T. C. Derby Plug, Attachment,, R. B. Benj neighbor Pucumatic actions, Equalizer for,, respectively.
Phenmatic separatorR. Moodic Potato-digging machineS. Swanson Potentiometer
Printing sylindric surfaces, Machine for
Printing sylindric surfaces, Machine for
Printing-press plate-clamping mechanism
Printing-press plate-clamping mechanism Printing-press, Web-perfecting, P. F. Cox Printing-press wind-shield P. F. Cox Printing-presses, Interchangeable plate- holder for K. M. and F. Schlueter Projectiles with a high-explosive hursting charge, Charging of1. Maxim Projectiles with high explosive, Apparatus
for charging or loading,,H. Maxim Projectiles with high explosives, Charging
for charging or loading
Pump, Condenser-, W. II. and W. L. Blake Pump connection. C. Paetz Pump connection. C. Paetz Pump pipe-pulling device. (2 pats.)
Railway-crossing. H. A. Emrick Railway-switch. L. A. Sydnor Railway-tic. G. D. Price Railway-tic. F. H. Blassingham Railway-tic. H. L. Hollis Railway-tic. J. L. Pfleegor Railway-tic-reinforcing device. J. F. Body Railways, Automatic switch for street.
Razor-handle. E. Wiederkehr Razor, Safety S. D. Baker Razors and similar implements, Guard for
Receiver-easing. L. Steinberger Reflector. L. A. Sagendorph
(Continued in June Number.)

WANTED-A RIDER AGENT.

NEACH TOWN and district to ride and exhibit a sample Latest Model

"Ranger" bicycle furnished by us. Our agents everywhere are making
money fast. Write for full particulars and special offer at once.

"Ranger" bicycle furnished by us. Onr agents everywhere are making money fast. Write for full particulars and special offer at once.

NO MONEY REQUIRED until you receive and approve of your bicycle. We ship to anyone anywhere in the U. S. without a cent deposit in advance, prepay freight, and allow TEN DAYS' FREE TRIAL during which time you may ride the bicycle and put it to any test you wish. If you are then not perfectly satisfied or do not wish to keep the bicycle ship it back to us at our expense and you will not be out one cent.

FACTORY PRICES We furnish the highest grade bicycles it is actual factory cost. You save \$10 to \$25 middlemen's profits by buying direct of us and have the manufacturer's guarantee behind your price until you receive our catalogues and learn our unheard of factory and the content of the co

Orders filled the day received.

SECOND HAND BICYCLES. We do not regularly handle second hand hicycles, but usually have a number on hand taken in trade by our Chicago retail stores. These we clear out promptly at prices ranging from \$3 to \$8 or \$10. Descriptive bargain lists mailed free.

GUASTER-BRAKES, single wheels, imported roller chains and pedals, parts, repairs and equipment of all kinds at half the regular retail prices.

Self-nealing Tires A SAMPLE PAIR

The regular retail price of these tires is

will sell you a sample NO MORETROUBLE FROM PUNCTURES

NO MORE TROUBLEFROM PUNCTURES

NAILS, Tacks, or class will not let the air out. A hundred thousand pairs sold last year.

DESCRIPTION. Made in all sizes. It is lively and easy riding, very durable and lined inside with a special quality of rubber, which never becomes por ous and which closes up small punctures without allowing the air to escape. We have hundreds of letters from satisfied customers stating that their tires have only been pumped up once or twice in a whole season. They weigh no more than an ordinary tire, the puncture resisting qualities being given by several layers of thins, specially prepared fabric on the tread. The regular price of these tires is \$10.00 per pair, but for advertising purposes we are making a special factory price to the rider of only \$1.50 per pair. All orders shipped same day letter is received. We ship C. O. D. on approval. You do not pay a cent until you have examined and found them strictly as represented.

We will allow a cash discount of 5 per cent (thereby making the price \$4.55 per pair) if you send FULL CASH WITH ORDER and enclose this advertisement. You run no risk in sending us an order as the tires may be returned at OUR expense if for any reason they are not satisfactory on examination. We are perfectly reliable and money sent ton sis as safe as in a bank. If you order a pair of these tires, you will find that they will ride seeler run faster, wear better, last longer and look finer than any tire you have ever used or seen at any price. We want you to send not reliable that when you want a bicycle you will give us your order. We want you to send not reliable that when you want a bicycle you will give us your order. We want you to send not reliable that when you want a bicycle you will give us your order. We want you to send not reliable that when you want a bicycle you will give us your order. We want you to send not reliable that when you want he sowed in the safety of these tires and sounderful offers we are making.

It is a supplied to the price of the price o

An Irresistible Bargain

\$1.75 Value for Only \$1.15

ALL FOR ONLY \$1.15

One Year's Subscription for McCall's Magazine, Any 15-Cent McCall Pattern you may select, One Year's Subscription for the Inventive Age

McCall's Magazine

Is a large, artistic, handsomely illustrated hundred-page monthly magazine. It contains sixty new Fashion Designs in each issue. Every woman needs it for its up-to-date fashions, entertaining stories and complete information on all home and personal topics. Over one million subscribers. Acknowledged the best Home and Fashion Magazine. Regular price, 5 cents a copy. Worth double.



McCall Patterns

So simple you cannot misunderstand them. Absolutely accurate. In style, irreproachable. You may select, free, any McCall Pattern you desire from the first number of the magazine which reaches you. Regular price, 15 cents.

The Inventive Age.

A journal of manufacturing industry and scientific progress. The indispensable paper for patentees. Contains matter and information not found elsewhere. Regular price, \$1.00 per year.

DON'T MISS THIS EXTRAORDINARY OFFER. Address: THE INVENTIVE AGE Publishing Co., Washington, D. C.

The DIAMOND

SELF-FILLING AND SELF-CLEANING Fountain Pen.

OF ANY OTHER PEN
MANUFACTURED BECAUSE OF ITS SELFFILLING AND SEEFCLEANING FEATURES.





Including one year's subscription to "The Inventive Age."

Price \$2.00.

No Lost Time.

No Soiled Fingers.

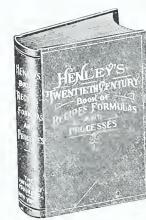
Address...

INVENTIVE AGE PUB'L. COMPANY, WASHINGTON, D. C.

HENLEY'S TWENTIETH CENTURY BOOK OF

Recipes, Formulas & Processes







Edited by GARDNER D. HISCOX, M. E.

Price, \$3.00 Cloth Binding

\$4.00 Half Morocco Binding

800 large Octavo (6 x 9½) Pages.

Contains over 10,000 Selected Scientific, Chemical, Fechnological, and Practical Recipes and Processes,

Including Hundreds of so-called Trade Secrets for every business.

This is THE BOOK everyone should have at his command who seeks PRACTICAL, ACCURATE KNOWLEDGE and GUIDANCE in his every-day work, as no book has ever been published which so fully meets the multifarious requirements of the factory, the workshop, the laboratory, and the household. In preparing the work for so exacting and numerous a class of readers the Editor has exerted every effort to present only information which is practical, accurate and modern.

Address...

INVENTIVE AGE PUB'L. COMPANY WASHINGTON, D. C.

SEND FOR OUR FREE CATALOGUE OF BOOKS FOR INVENTORS AND MECHANICS.

Address: THE INVENTIVE AGE PUBL'G CO., 918 F St., Washington, D. C.



Vol. XXIII. No. 6. }

WASHINGTON, D. C.—JUNE 1, 1911.

Single Copies 10 Centa One Dollar a Year.

COMBINED MOTORBOAT AND AEROPLANE.

By Frank C. Perkins.

THE ACCOMPANYING ILLUSTRATION shows a combined aeroplane and motor boat, six of these equipments having been ordered by the Detroit and Cleveland Aerial Navigation Co., to be used in dispatch service between Detroit, Cleveland and Buffalo, and designed for a speed of 60 miles per hour.

This combined aeroplane and motor boat has an extreme length over all of 18 feet. The length of pontoon is

6 feet with a beam of 48 inches. The length of aerial plane is 4 feet, and width 12 inches. The aerial propeller is 6 feet in diameter with 6 feet pitch and a speed of 1200 revolutions per minute.

The engine is fifty horsepower, of the 8 cylinder V-type, having a complete weight of 200 pounds. The aerial planes are 4 feet from the deck, and the speed in water is 50 miles an hour.

The motor is fourcycle, with cylinders 3½ x 3¾ inch stroke. All bearings are die cast or nickel babbit. and the cam shaft is of one-piece con-

struction, with five babbit bearings. The timing gears are of steel and the valve tappets are hardened and ground, with fibre inserts, while the valves are 1½ inches in diameter with grey iron heads fused onto steel stems by a special process that makes it absolutely impossible for them to wear loose, and is said by experts to be a perfect valve construction. The cylinders are L.type, cast in pairs and water cooled.

It is claimed that for compactness, simplicity and power developed, this motor is unique and can show greater mileage per gallon of gasoline than any form of engine. It also is said to give a much steadier running engine than either the four or six cylinder, as it gives four impulses on each revolution of the crank shaft, and the operator can throttle it to a very slow speed.

This machine has been appropriate- used in Europe. It is called an aero-

feet back of the hull. The rush of air against the plane at times lifts the craft several feet above the surface of the water, but the tail board is always in the water and acts as an equili-

It is of interest to note that just at the time when this machine is being tried in the United States, a device similar in principle, although differing in details of construction, is being to provide vertical stability, run from amidship to the stern, one on each side of the body, and a third plane, triangular shaped, is arranged under the bow for the same purpose. The floats skim slightly over the water.

This extraordinary looking craft is shown in Fig. 2. The view of this aero-motor boat was taken just after it was launched, the large garage or hanger being noted in the back ground.

This latest European flying boat was

built for S. E. Saunders, the pioneer of so many forms of boats, and the floats constitute the hull, while the body of the machine, it will be seen, follows more or less conventional lines.

It is maintained that the first machine to actually arise from the water was a Faber monoplane piloted by M. Ravaud, whose name is familiar as the designer of the two "aeroscaphes" launched at Monaco, and who has been experimenting at Shoreham, England with some remark-

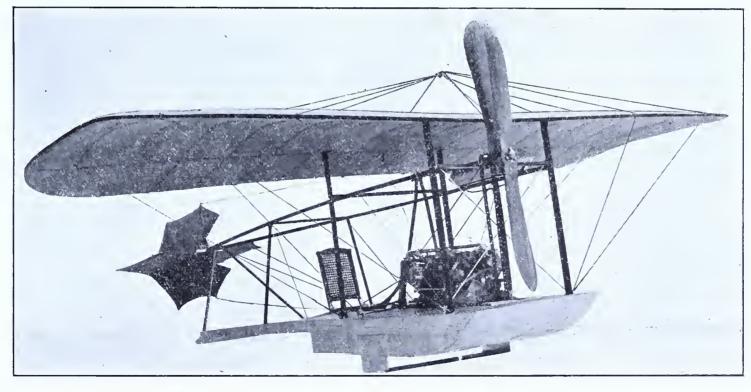


FIG. 1.—DISPATCH MOTORBOAT AND AEROPLANE FOR THE DETROIT AND CLEVELAND NAVIGATION CO.

ly named "the flying fish," as it skims hydroplane, and was built by an over the water, barely touching it. The hull is a water-tight aluminum tank, above which is a single plane, and on the framework back of this, as will be seen in the illustration, is an aerial rudder. When sufficient speed has been attained to lift the hull completely out of the water, it rides upon its tail, which is a flat board, five feet seven inches long and one foot wide, fastened to arms extending several

English firm for the Monaco motor boat races. It consists of two hydroplane floats, each about 20 feet long, hinged to supports carrying a boatshaped body. The aerial propeller is driven direct by a 50 horsepower rotary engine, located at the stern by the raised body. The aerial steering rudder is over the raised body, and is controlled from the driver's seat by a steering wheel. Two planes, designed

able results. The two hydroplanes at the bow as well as the two on the side all are held on floats or skimmers. resting on the water.

Other curious combinations of means of transport are daily noted. The automobile which can be transformed into a motor boat has proven a success, and also the one which can be changed into a sleigh, with runners for traversing ice and snow. Airships

are being constantly improved and the name of the various devices for increasing safety and comfort in this new line of locomotion, is legion. A large machine invented in France is provided with a closed protecting hood for the operator. It is thought that some of the terrible fatalities that marked 1910 were due to the air man becoming so chilled and numb in the glacial regions of the upper air, that he lost control of the apparatus. This hood is of mica, and will doubtless make conditions more comfortable for the operator. Louis Paulhan, who has retired on his laurels as an aviator and turned manufacturer, has devised a bullet-shaped car in which the air man is to sit, which also protects the body and leaves only the head exposed, as in the racing automobile. An aeroplane which

that of Chavez, the aviators had just finished a long glide, and while traveling at a terrific speed, suddenly changed their paths from an angle of 30 degrees to a horizontal. In each of these cases the motors were running at the highest speed and were revolving anti-clockwise as viewed from the front. All published accounts of the accidents agree that at the point where the elevator was raised to alter the gliding angle, the machine seemed to shudder an instant, turn slightly to the left and plunge downward. The presence of this force in the flywheels and clutches of automobile motors, the inventor claims, has been the direct cause of at least 75 per cent of all automobile accidents. It is this force that lifts the rear wheels of a two ton motor car clear of the pavement and causes it to slowly skid or spreads a parachute when falling, in revolve until very often the auto has somewhat the same manner that a turned a complete circle. If this force bird spreads its wings, is being tried. is so powerful in its action with auto-

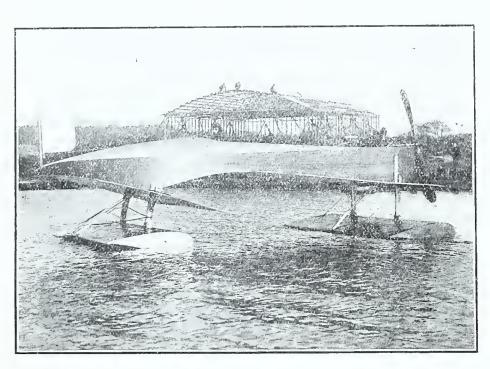


Fig. 2.—Motor boat just launched and ready to fly.

The parachute is in the form of additional planes or bearing surfaces, which are tucked in when flying, and drawn out in case of accident. More comprehensive than any of the above, however, is a recent novel application of the gyroscope to flight. Working on the theory that many disasters are caused by the gyroscopic action of the revolving parts of the motor when making a sudden change in direction of the machine, a machine has been invented in which this action is modified by dividing up the revolving parts into two units and making them turn in opposite directions. It is claimed that what has been considered an aid to stability has under certain conditions been a mysterious agent of destruction. The mongyroscopic motor has ten air cooled cylinders, half of which may be run independently of the others, and the whole is remarkably simple in construction.

Since Brennan employed the gyroscope in the monorail, the idea has been generally accepted that this force would tend to stabilize flying machines. But Brennan's device is vastly different from the revolving parts of high-speed aeronautic motors. In the accidents that caused the death of Hoxsey and Moissant, as well as

mobiles, it must cause much greater havoc in the delicate airship.

Diver's Gun.

The latest addition to the military equipment of the world is a gun that shoots water instead of the ordinary projectile. This is not a toy, but is designed for serious service in protecting the men who labor on the floor of the ocean against the monsters of the deep. The gun resembles the usual rifle. Compressed air is the power used, the air being contained in a cartridge covered with India rubber. The water is shot from the gun barrel with an enormous velocity and is said to have remarkable penetrating power. Heretofore divers have been forced to depend on the knife to defend themselves against the enemies that make their work danger-

To keep themselves posted in the progress of the arts in which they are interested, inventors and manufacturers should subscribe for the IN-VENTIVE AGE, which publishes a list of all patents issued each month. The low subscription price and the character of the publication entitle it to the support of all the inventors of the

Aluminum Alloys.

At a recent aeronautic exhibition in London, much interest was evinced in a new material that was shown to be considerably lighter than aluminum, while resembling it in its silver-white appearance, and possessing its other properties. Experiments showed that while it possessed strength, it weighed less than seven-eights as much as aluminum, for a given bulk. This remarkable material was an alloy of aluminum and magnesium, the invention of a German physicist. It promises to fulfill all the hopes originally felt in regard to aluminum, but never fully realized on account of the softness and other unfavorable characteristics of the latter. Aluminum can be cut with a knife, like lead or zinc. The new metal, on the other hand, is hard, and may be turned, planed or drilled with ease. It is much tougher than aluminum, with a tensile strength about equal to that of brass, yet is extremely malleable. It is also so ductile that it can be rolled and beaten like silver, and so is well adapted for wire making. Aluminum cannot be machined; but with the cutting tool moving at high speed, the new metal can be turned or cut like soft steel, and the surfaces so cut are smooth as a mirror.

The popular impression that aluminum is the lightest of all known materials is by no means correct. It is a little more than two and a half times as heavy as water, whereas magnesium is only one and three quarter times as heavy, or in other words, nearly one third lighter than aluminum. Thus it is clear that the new metal, which is an alloy of the two substances, is less heavy than aluminum itself.

Magnesium is obtained from chlorid of magnesium, by electrolysis. Practically all of it comes from Europe. The chlorid is derived from bittern, the bitter tasting liquid left behind when salt is made from sea water. This liquid contains large quantities of magnesium chlorid. But a more important source of the substance, from a commercial standpoint, is the famous deposit of chemical salts (sodium, potassium and magnesium) at Strassfurt, Germany.

Another metal lighter than aluminum is beryllium, so called because it is derived from the mineral known as beryl, transparent crystals of which often have high value as precious stones. But this substance is so expensive to isolate that it is still a mere curiosity of the laboratory—as aluminum was a third of a century back. Still another rival of the latter in weight is lithium, which is less than one fourth as heavy. This too is a laboratory curiosity, no practical use having been found for it. Indeed, it is difficult to see how it could be turned to useful account, for it oxydizes with such rapidity in the air that within a very short time it loses itself, so to speak. If heated, it will actually burn in water.

The new alloy, on the contrary, has already been used for a variety of

purposes, including telephones, telescopes, typewriters, phonographs, watch cases, surgical instruments, chemical and other scientific apparatus, for which a combination of lightness and rigidity is desirable. Its adaptation to flying machines is too obvious to need mention; and it also finds application for automobiles, bicycles, gasolene engines, kitchen utensils, forks, spoons, table dishes, etc. It even promises to obtain employment in the manufacture of wire net and agricultural implements. And as yet, it is only in the experimental stage of its develor ment. It is made with various percentages of magnesium, from two parts to twelve parts of the latter for every one hundred parts of aluminum. The cost of it is not great, aluminum being so very cheap and magnesium purchasable in large quantities at a price notgreatly exceeding one dollar per pound. The new metal, it is predicted, represents the solution of the much vexed aluminum problem. It makes aluminum available for an immense number of important industrial purposes, while actually lessening its weight.

Aluminum is the most abundant of metals, composing one-eighth of the earth's crust. Every cubic yard of ordinary clay contains many pounds of this material. No wonder that every metallurgist has dreamed of extracting aluminum from clay. A French chemist has actually succeeded in doing this, though as yet not cheaply enough to render the process profitable. This chemist, says Rene Bache in a recent magazine, heats the clay with iron in an elastic furnace. The iron combines with the silica in the clay to form ferrosilicon, a substance already used in the steel industry to remove oxygen from the product while in process of manufacture. The separating of the ferrosilicon from the mixture in the electric furnace leaves behind a quantity of aluminum oxid, from which it is an easy matter to obtain metallic aluminum by electrolysis. Up to date the method described has been found too costly to pay; but the inventor believes a solution of the problem is in sight. Meanwhile he is able to get some of his money back from the sale of ferrosilicon to steel makers.

The discovery of a means by which aluminum can be obtained cheaply from ordinary clay will make an extraordinary change in the world's affairs. It will mark the beginning of the aluminium age. Aluminum, in large measure, will take the place of wood. With suitable magnesium or other alloys to adapt the metal to various purposes, we shall have aluminum ships, aluminum bridges, aluminum furniture, and even aluminum houses. These last will not be wholly a novelty, for small houses of aluminum are already known. Within the last six years many aluminum houses, usually eight feet cubic, constructed for the purpose, have been carried by gold seekers to Alaska, where some sort of shelter more substantial and more durable than tents. while light and easily transportable in a collapsed form, is urgently demanded.

INSTANTANEOUS ELECTRIC WATER HEATERS.

THERE is no doubt that instantaneous water heaters of the type shown in the illustrations can be utilized to special advantage, and are economical in operation from the fact that there is no continuous radiation of heat, as with a tank of water kept constantly hot by coal or gas heat.

The electric washstand heater, shown in the illustration Fig. 1, is installed over the washbowl, and will furnish a copious supply of hot water at any hour of the day or night, while the buffet instantaneous electric water heater, having a capacity of four quarts, will furnish hot water in less than one minute.



FIG. 1.—WASHSTAND HEATER.

It is stated that starting from cold, the first glassful of steaming hot water can be drawn in forty-five seconds after the current is turned on, a second glassful fifteen seconds later, and so on until the globe is empty. A therapeuti: electric water heater is utilized by physicians, surgeons and dentists for furnishing water for hot compresses and for sterilizing instruments.

In all of these water heaters, the electric heating element consists of one or more carbon rods, varying in size and number with the capacity of the heater, enclosed in a metallic cylinder through which the water flows, and so arranged that there is an open circuit between them. By this arrangement the current switched on the heater does not become operated until the water enters the heater, the open circuit between the carbon rod being bridged by the water which is instantly raised to a high temperature by the passage of the electric current through it. It will thus be seen that turning on the current alone produces no effect in the water, as nothing happens until the water is turned on since the water itself forms a connecting link.

This arrangement prevents waste of current, destruction of the heating

elements and danger resulting from the sudden admission of cold water to a superheated cylinder. In case the user forgets to turn off the current after drawing the hot water, there will be no damage done, since the water remaining in the cylinder will form steam and be ejected from the spout of the heater, the current ceasing to flow as soon as the water has all evaporated, even though the main line switch still be closed. It will thus be seen that these instantaneous water heaters by their novel design, automatically make and break the circuit, making them fool-proof in every way.

This latest application of electricity to the daily uses of humanity is only another illustration of the marvelous debt that the world owes to Franklin. his shoes, and the application of massage, is done by the silent and swift electric servants. This power is being used more and more in the kitchens of large hotels and like establishments. In the laboratory, in the hospital, in countless forms of domestic service, it renders indispensable aid. In its commercial aspect, too, it permeates all business life. This is the motor age, and Edison's prophecy that the horse for commercial uses will disappear from the city streets, is on the way to being fulfilled. Dobbin's place is being taken by electric cars and by other automatic vehicles that handle urban

The United States not only leads all nations of the world in manufacturing electrical apparatus, but sends men abroad to do construction work. Yankee push, which built a trolley

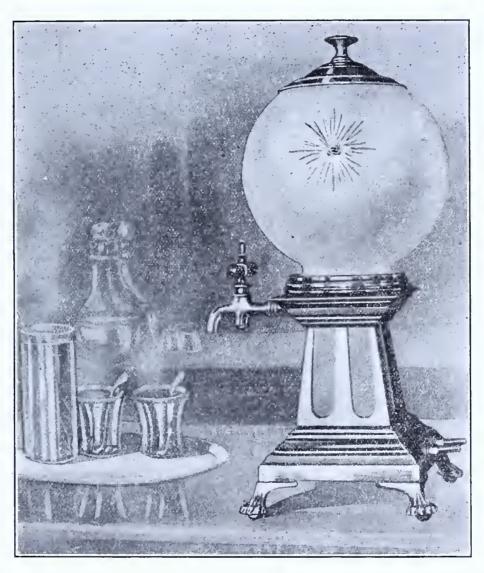


FIG. 2.—BUFFET ELECTRIC WATER HEATER.

In all parts of the country the use of line to the pyramids, is supervising electrical apparatus, and the variety of its employments are increasing by leaps and bounds. The things that cannot be done by electricity are now hardly worth doing. Whether it be to milk a cow or to create a temperature of such intense heat as has never before been attained—a mere trifle, perhaps, of over seven thousand degrees the volatile agent lured from the clouds by a kite is almost invariably called upon.

Descriptions of the electrical house constructed and arranged by a Frenchman have appeared in these columns. Similar houses are being built in this country, where everything, from the ringing of the door bell as the guest approaches to the

electric transportation all over the world. In this country, the electric lines carry seven times as many passengers as the steam roads. In many of the most highly productive manufacturing districts of the United States, electric power has been installed ten times more generally than any other kind. The total of sales last year of the three greatest producers in this field in America reached the enormous sum of nearly two hundred million dollars. The product represented by this vast total enters into the daily lives of all classes of mankind. The bulk of the production of one of the greatest of these companies consisted not in power plants or huge engines, but in that universal agent

serving of his meals, the brushing of of every day life—the ubiquitous telephone. This country sends over the wires over fifteen billion telephone talks every year, which figures give some idea of the extent to which, through the phone, the whole land is being electrified.

At about the middle '50's when telephones first began to be put on the market in large numbers, the total output for the year was 60,000 instruments-a figure commented upon in the press at that time as an amazing indication of progress. Now that total represents the output of less than two weeks. The advantages of telephony over telegraphy are two in number: Firstly, the rapidity with which answer can be got to a question, and secondly, the much greater number of words which can be dealt with in a given time by one operator. It is easy to get answers to a dozen questions arising successively out of one another in the course of a three minutes conversation over the phone, while the same conversation carried on by telegraph would, under ordinary circumstances, have occupied a day. The actual number of words which one person can transmit per minute is also much greater in telephony, it being quite easy to speak two hundred words per minute, while in telegraphy the highest speed attainable by an expert operator is less than fifty. The modern high-speed systems of telegraphy, of which so much has been heard recently, do not appreciably increase the speed at which an operator can work, but merely add to the carrying power of the wire. This accounts for the enormous development of the telephone system as compared to the telegraph. When we consider that in thirty years the number of phone subscribers in the world has grown from nil to the vast total of two millions, it becomes obvious that this means of electric communication fulfills the needs of everyday business and social life more perfectly than the other, and furnishes a reason for the fact that the number of words conveyed daily by telegraph is now only a small fraction of those transmitted by phone. Thirty thousand employes of the telephone company were kept busy last year in turning out the little talking machines and their accessories, and the results of this labor, if combined would create a monster telephone three hundred miles high weighing four thousand tons - a colossal monument to the use of electricity in every day life.

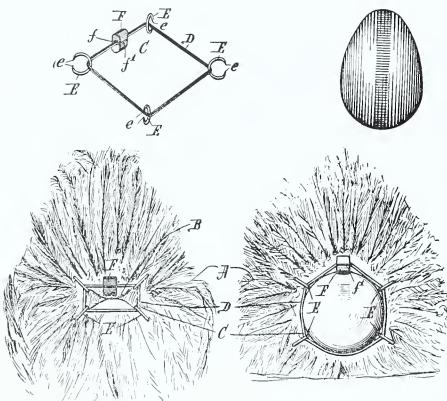
Other uses of electricity, while not as far reaching, are as familiar. The business man in his office looks at an electric clock and takes an electric elevator to the ground floor, as well as an electric car to reach his home. Electricity lights his way, and then his house when he reaches it. The milk left at his door in the morning is handled by an electric machine in the dairy from whence it comes; the flour in the bread is produced by electrical apparatus; the cloth which covers his body owes its debt to the subtle vibrating medium. Indeed, the time has apparently come when an old saying must be revised, for today, at any rate, it is electricity which makes the world go round.

CLEVER NEW PATENTS.

EGG MARKING DEVICE.—MILLING COTTON SEED.

Egg Marking Device.

Greater attention is being paid each year to poultry raising, and it is being generally realized that system is necessary to make the business profitable. Instead of the haphazard methods of the barnyard, successful poultry plants have elaborate organizations and give close attention to details. Records are kept of the laying capacities of each hen, and an invention that will aid in this direction has just been made by Stanley A. Merkley, of Buffalo, N. Y. He has a device intended to be attached to the fowl and to mark the eggs as they are being laid, and he uses a variety of colors and designs so as to make possible a large combination of marks, in order that the eggs of each hen can be identified and proper credit given. The drawings herewith illustrate the device, one view showing a marker ready to be attached, another the manner in which the egg is marked, another the way in which the device is applied to the hen, and the fourth showing the marking device expanded and an egg passing therethrough in its passage from the hen. As will be seen, the device comprises an elastic band secured in position around the vent of a hen by rings which are passed through the walls thereof, an operation which in no way injures the fowl. Marking elements F have central longitudinal openings f and and narrow slots f^1 extending therefrom to the surface of the

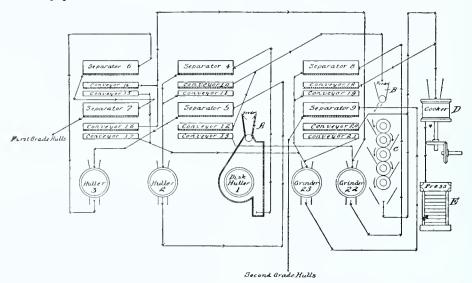


markers. To place the latter on the supporting ring, the elastic band is stretched so as to reduce its diameter enough to enable it to pass through the slot and enter the opening f. The band is then released and fills the opening, securing the marker by frictional contact. When the egg issues from the vent it expands the wall of the latter, causing the supporting band to expand, as shown in the cut, and as the egg passes through the band, the marker marks the egg lengthwise, as also shown. Two markers may be attached to adjoining sides of the band, and they may be of different colors, so that the egg may be distinctively marked. Other positions may be given these markers, to further differentiate the eggs. The marker is confined in a protector when the supporting band is in normal position, thus keeping it clean. This shield is in the form of a casing closed at one end and open at the other, the closed end having an eye through which the adjacent securing ring is passed, thus holding the shield in proper position to receive the marker. When the egg passes through the supporting band, the latter expands, causing the marker to be drawn from the protector, and as soon as the supporting band is 16lieved of tension the marker enters the protector again.

Milling Cotton Seed.

Cotton seed oil is widely used as a substitute for lard, and the hulls that remain after the oil is extracted are pressed into cakes and fed to live stock, having been found to contain a quantity of protein. Hale E. Hawk, of Greenville, Miss., has invented a method of separating the oil and other contents of the seeds and of so reducing them as to increase the product and improve the quality. The seed, first cleaned and delinted, is passed through a feeder to a huller, and then into a separator which divides the meats or oil bearing stock from the tailings or hulls. Conveyors are employed with the separator, one equipped with a screen which separates the seeds into two grades, one of which passes into a lower conveyor. The substantially pure meats are first divided from the hulls and pass to the conveyor numbered 10 in the drawing, in which further separation is effected, hulls or husks being disharged into the conveyor 11 and passing along with the tailings from the separator to a second huller 2. The pure meats pass from the conveyor 10 to a feeder $8\,\mathrm{con}$ meeted with crushing rolls C. It is important to eliminate all husks or hulls from the pure meats before the latter pass through the rolls, as their presence

would keep the rolls spaced apart, and prevent the complete mashing of the small oil cells. The mass passes from the rolls to the cookers D and then to the presses E. The tailings pass to a separator 5 discharging one grade of material to a conveyor 12 where they are again separated, the purer parts passing to the feeder B and crushing rolls C and the refuse being carried to the grinder 22. The tailings from the separator 5 pass to a disk huller. From the grinder the mass goes to a separator 8 where a similar process is effected, the substantially pure meats being carried to the cookers with the crushed meats from the rolls, while the material from the conveyor 19 goes to a second grinder with the tailings from separator 8. The material discharged from the disk huller is further separated and ground, the process being repeated several times as above described. This method of passing the seed through a number of separating devices extracts the greatest possible quantity of practically pure meats from the stock. A mixture of the hulls and husks,



which are rich in protein and ammonia, is added to the pure meats, so as togive the best results in quality of the resulting product. The grinders reducethe meats which retain portions of the hull to the consistency of fine meal, without interfering with the porosity and absorbent qualities of the fibers, thus forming a product which will readily mix with the pure meats that pass into the cookers. The mixed product is of uniform fineness so that the ouration of the cooking process may be accurately determined. This improvesthe taste and permits the product to be of the best grade.

WANTED-A RIDER AGENT

INEACH TOWN and district to ride and exhibit a sample Latest Model

"Ranger" bicycle furnished by us. Our agents everywhere are making
money fast. Write for full particulars and special offer at once.

NO MONEY REQUIRED until you receive and approve of your
bicycle. We ship to anyone anywhere in the U.S. without a cent deposit
in advance, prepay freight, and allow TEN DAYS' FREE TRIAL during
which time you may ride the bicycle and put it to any test you wish

in advance, prepay freight, and allow TEN DAYS' FREE TRIAL during which time you may rido the bicycle and put it to any test you wish. If you are then not perfectly satisfied or do not wish to keep the bicycle ship it back to us at our expense and you will not be out one cent.

FACTORY PRICES We furnish the highest grade bicycles it is possible to make at one small profit above actual factory cost. You save \$10 to \$25 middlemen's profits by buying direct of us and have the manufacturer's guarantee behind your bicycle. Do not buy a bicycle or a pair of three from anyone at any price until you receive our catalogues and learn our unheard of factory prices and remarkable special offers to rider agents.

YOU WILL BE ASTONISHED when you receive our beautiful catalogue and study our superb models at the wonder-less money than any other factory. We are satisfied with \$1.00 proint ahove factory cost. Orders filled the day received.

BICYCLE DEALERS, you can sell our bicycles under your own name plate at double our prices. Second hand bleycles, but usually have become the day received.

BICYCLE DEALERS, you can sell our bicycles under your own name plate at double out process. Orders filled the day received.

SECOND HAND BICYCLES. We do not regularly bandle second hand bicycles, but usually have a number on hand taken intrade by our Chicago retail stores. These we clear out promptly at prices ranging from \$3 to \$3 or \$10. Descriptive bargain lists malled free.

GUASTER-BRAKES, single wheels, imported roller chains and pedals, parts, repairs and equipment of all kinds at half the regular retail prices.

Self-healing Tires a Sample Pair To introduce, only

NO MORE TROUBLE FROM PUNCTURES

NAILS, Tacks, or Class will not let the air out.

A hundred thousand pairs sold last year.

DESCRIPTION: Made in all sizes. It riding, very durable and lined inside with a special quality of rubber, which never becomes porous and which closes up small punctures without allowing the air to escape. We have hundreds of letters from satisfied customers stating that their tires have only been pumped up once stating that their tires have only been pumped up once or twice in a whole season. They weigh no more than an ordinary tire, the puncture resisting qualities being given by several layers of thin, specially prepared

Notice the thick rubbertread "A" and puncture strips "B" and "D" also rim strip "H" to prevent rim cutting. This tire will outlast any other

an ordinary tire, the puncture resisting qualities being given by several layers of thin, specially prepared fabric on the tread. The regular price of these tires is \$10.00 per pair, but for advertising purposes we are making a special factory price to the rider of only \$4.80 per pair. All orders shipped same day letter is received. We ship C. O. D. on approval. You do not pay a cent until you have examined and found them strictly as represented.

We will allow a cash discount of 5 per cent (thereby making the price \$4.55 per pair) if you send FULL CASH with Order and enclose this advertisement. You run no risk in sending us an order as the tires may be returned at OUR expense if for any reason they are not satisfactory on examination. We are perfectly reliable and money sent to us is as safe as in a hank. If you order a pair of these tires, you will find that they will ride easier, run faster, wear better, last longer and look finer than any tire you have ever used or seen at any price. We know that you will be so well pleased that when you want a bicycle you will give us your order. We want you to send us a trial order at once, hence this remarkable tire offer.

IF YOU NEED THRES don't huy any kind at any price until you send for a pair of Hedgethorn price quoted above; or write for our big Tire and Sundry Catalogue which describes and quotes all makes and kinds of tires at about half the usual prices.

DO NOT WAIT but write us a postal today. Do NOT THINK OF BUYING a bicycle or a pair of tires from anyone until you know the new and wonderful offers we are making. It only costs a postal to learn everything. Write it now.

LATEST COURT DECISIONS IN PAT-ENT, COPYRIGHT AND TRADE-MARK CAUSES.

KEYSTONE TYPE FOUNDRY v. PORT-LAND PUB. CO.

(Circuit Court, D. Maine. July 16, 1910, and Aug. 11, 1910. 180 F. R. p. 301.)

1. TRADE-MARKS AND TRADE-NAMES-UN-LAWFUL COMPETITION.

The manufacturers of a peculiar style of type, unpatented, which is marketable only on account of its utility, cannot restrain another from producing type of the same char-

2. TRADE-MARKS AND TRADE-NAMES-USE OF NAMES-INFRINGEMENT.

Where complainant produced a peculiar style, which it sold under the name of "Caslon Bold," devised by the complainant to indicate its own goods, another manufacturer may be restrained from making use of that name.

3. TRADE-MARKS AND TRADE-NAMES-RE-

Where, ou a bill in equity asking restraint of the unlawful use of a trade-mark, there was in neither the record nor the presentation of the case any suggestion of any damages which would justify the expense of an accounting, a master will not be ordered. Ludington Co. v. Leonard, 127 Fed. 155, 157, 62 C. C. A. 269, and other like cases, applied.

BOLTE & WEYER CO. v. KNIGHT LIGHT CO.

(Circuit Court of Appeals, Seventh Circuit. May 11, 1910. Petition for Rehearing Denied June 10, 1910. 180 F. R. p. 412.)

1. PATENTS - "INFRINGEMENT"-DESIGNS-"SAMENESS OF APPEARANCE."

The object in a design patent is, not to identify the article as an article of trade, but to ornament it, so as to make it pleasing to the eye; and while "sameness of appearance" is identity of design, the test of in-fringement is not whether an ordinary pur-chaser might be deceived into buying one article for the other, but the sameness of appearance which constitutes "infringement" is the sameness of æsthetic effect on an ordinary observer.

2. Patents — Infringements — Design for

The Weyer design patent, 38,638, for a design for lamps, held not infringed.

GREENWALD et al. v. WEISS.

(Circuit Court, W. D. Wisconsin. June 7, 1910. 180 F. R. p. 474.)

1. PATENTS - VALIDITY AND INFRINGEMENT -CHEESE SRIRRING APPARATUS.

The Deal patent, No. 772,701, for a cheese stirring apparatus, was not anticipated and is valid, being for a new combination of old elements which act together to produce an improved result by securing a more uniform stirring of the milkin making brick or Swiss cheese, and shortening the operation; also, held infringed.

2. PATENTS—PATENTABILITY—PRIOR USE— BURDEN OF PROOF.

To avoid a patent on the ground of prior use, the burden rests on the defendant, and the evidence must be clear and convincing.

LIEBIG'S EXTRACT OF MEAT CO. v. LIEBIG EXTRACT CO.

(Circuit Court of Appeals, Second Circuit. May 2, 1910. 180 F. R. p. 688.)

TRADE-MARKS AND TRADE-NAMES — IN-FRINGEMENT-EXCLUSIVE RIGHT TO USE THE NAME "LIEBIG" FOR EXTRACT OF

Complaniant held entitled to an injunction restraining defendant from using the word "Liebig" in connection with the sale of extract of meat, on evidence showing without contradiction that Baron Liebig granted to complainant's predecessor in business the exclusive right to use his name in connection with extract of meat made by his process, and that complainant sold its product in the United States under such name for 20 years before the name began to be used in this country by any one else. STATE BANK OF CHICAGO et al. v. HILLMAN'S.

(Circuit Court of Appeals, Seventh Circuit. June 10, 1910. 180 F. R. p. 732.)

1. PATENTS-SCOPE-DESCRIPTION OF IN-VENTION.

A patentee cannot describe something to the world in his letters-patent that means just that thing or its equivalent, and, having claimed that, claim in addition something not thus described and not equivalent.

2. PATENTS - INFRINGEMENT - CURTAIN-

The Mayr patent, No. 705,857, for a curtain-stretcher, is limited by the description and drawings to a stretcher the bars of which are "adapted to fold in the same plane." As so construed, held not infringed.

GEORGE FROST CO. et al. v. SAMSTAG et al.

(Circuit Court of Appeals, Second Circuit. July 19, 1910. 180 F. R. p. 739.)

1. PATENTS-USE OF DIFFERENT MATERIAL -"Invention"

The use of a different material in constructing an article previously patented involves invention where it produces a useful result, increased efficiency, or a decided saving in operation.

2. PATENTS -- INFRINGEMENT -- HOSE SUP-PORTERS.

Gorton patent, No. 552,470, for a hose suporter, in so far as it provided for a rubber button, involved patentable invention and covered a supporter having a shankless button of rubber or other clinging material.

AMERICAN STREET FLUSHING MACH. CO. v. ST. LOUIS STREET FLUSHING MACH. CO. et al.

(Circuit Court, E. D. Missouri, E. D. June 17, 1910, 180 F. R. p. 759.)

1. Patents-Infringement — Profits Re-COVERABLE - STREET FLUSHING MA-

The only invention disclosed by the Ottofy patent No. 795059, for a street flushing cart, is in the combination with other elements, all of which are old, of a nozzle of such construction and position as to throw the water in a flat sheet nearly parallal with the surface of the street in a forward and lateral direction so as to loosen up the dirt and force it away to the sides of the street, and on an accounting an infringer is liable only for the profits realized from the use of such improved nozzle, over what he might have made by the use of other nozzles that he did not infringe.

2. PATENTS-INFRINGEMENT - PROFITS RE-COVERABLE - STREET FLUSHING MA-

In an accounting for profits a defendant has made by the use of an infringing device which is a mere improvement upon what was known before and was open to defendant to use, the complainant has the burden of proof to separate or apportion the profits made from the patented and unpatented

FRAZER v. ROHR.

(Circuit Court, S. D. New York, Aug. 3, 1910. 180 F. R. p. 773.)

1. PATENTS - INFRINGEMENT - SCOPE OF

A patent for an invention designed to give to spectators at an amusement place a false impression of the courage and skill of a bicycle rider, the movements of the wheel being, in fact, mechanical, cannot be used to prevent a rider who has the courage and skill so simulated from exercising the same.

2. PATENTS—INFRINGEMENT — AMUSEMENT RAILWAY.

amusement railway, held not infringed.

3. Words and Phrases - "Amusement RAILWAY."

The phrase "amusement railway" includes those devices in which a car or other vehicle moves along a track in startling and surprising evolutions or through imitation scenery for the gratification of the occupants. 4. WORDS AND PHRASES-"RAILWAY."

The phrase "railway," when used in connection with a patent for a pleasure car moved by an independent means of locomotion, may not necessarily include a vehicle traveling on a pair of fixed rails, but it does denote that the vehicle travels in a prede-termined course rigidly controlled to that

course independently of the will of the occupant. A bicycle following a groove, and not controlled by the sides, is a railway within the meaning of the patent laws.

COLLINS v. DUNLAP & CO.

(Circuit Court, S. D. New York, Aug. 10, 1910, 180 F. R. p. 775.)

PATENTS-INFRINGEMENT-WOMAN'S HOOD. In the Collins patent, No. 944,176, for wearing apparel consisting of "a convertible head covering and neck piece comprising an arched portion of soft material and a collar," this is an element of each of the two claims, and the patent is not infringed by an article having no collar.

EXCELSIOR DRUM WORKS v. SHEIP & VANDEGRIFT.

(Circuit Court of Appeals, Third Circuit. Aug. 19, 1910. 180 F. R. p. 980.)

1. PATENTS-INVENTION-HORN FOR TALK-ING MACHINES.

The use of hoops or bands around the horn of a talking machine to hold the longitudinal sections in place does not involve invention in view of the long use of such hoops for the same purpose in other arts.

2. Patents—Infringement—Horn for Talking MACHINES.

The Soistmann patent, No. 873,908, for a horn for talking machines, claim 3, which covers as the only uovel feature "a reinforcing band surrounding the body of the horn intermediate its two ends," must be limited to a band which envelopes the structure from end to end, either spirally as shown in the specification and drawings, or radially, being otherwise devoid of invention. As so construed, held not infringed.

AUTOMATIC SWITCH CO. v. MONITOR MFG. CO. et al.

(Circuit Court, D. Maryland, June 15, 1910. 180 F. R. p. 983.)

1. PATENTS-ASSIGNMENT-EFFECT AS ESTOP-PEL--CORPORATION ORGANIZED BY AS-SIGNOR.

A corporation organized by a patentee, who subscribed for two-thirds of the stock and paid for it with money received from another corporation to which he assigned the patent, is bound by his estoppel, and cannot question the validity of the patent, nor introduce evidence so as to limit its concentration as to render it worthless. struction as to render it worthless.

2. Patents-Claims-Combination-Effect. Every part of a combination claimed in a

presumed to be material to the combination, and in a suit for its infringe-ment evidence to the contrary is not admis-

3. PATENTS—CONSTRUCTION-ACQUIESCENCE IN REJECTION OF CLAIMS.

A patentee who originally sought broader claims which were rejected, and who acquiesced in such rejection, cannot insist on such a construction of an allowed claim as would cover what had been previously re-

4. PATENTS-ASSIGNMENT-EFFECT AS ESTOP-

In a suit for infringement by the assignee of a patent against the assignor, where it is not shown that the assignor made any representations other than those necessarily involved in the assignment, he is estopped only to deny that the invention presented a sufficient degree of utility to justify the issuance of the patent, and with this limitation the court will apply the same rule of construction which would be applicable between the patentee and a stranger, and, on the question of infringement, the defendant may show the prior state of the art to limit the scope of the claims sued on.

5. PATENTS — INFRINGEMENT — ELECTRIC SWITCHES.

The Whittingham patents, No. 716,504 and No. 757,853, for improvements in electric switches, construed, and held not infringed.

FOSTER HOSE SUPPORTER CO. v. TAYLOR.

(Circuit Court, D. Connecticut. June 29, 1910. 180 F. R. p. 994.)

1. PATENTS - LICENSE - CANCELLATION -ROYALTY-DELAY IN PAYMENT-WAIVER.

Where complainant licensed defendant to manufacture under a patent, before the patent had been established by adjudication, by a contract authorizing forfeiture in case of nonpayment of royalties when due, and on May 9, 1907, immediately after

the validity of the patent had been establish ed, gave a notice of cancellation for the licensee's alleged default in the payment of royalties, but on the 13th following accepted full payment for all royalty accrued on the day following the notice, he waived his right to enforce a forfeiture.

2. Patents-Licenses-Forfeiture Notice.

A provision, in a license to manufacture under a patent, that in case of a failure to pay royalties as agreed the licensor by a written notice may terminate the contract, is unavailable in case of default to cnable the licensor to declare and enforce a forfeiture without resort to a court of equity.

NEENAN v. OTIS ELEVATOR CO.

(Circuit Court, S. D. New York, June 2, 1910. 180 F. R. p. 997.)

1. PATENTS-CONTRACT OF ASSIGNMENT-CONSTRUCTION—GUARANTY OF ROYAL-

In a contract for the assignment of patents relating to elevators in which the assignee agreed to pay a royalty on each of the clevators it constructed, a provision that, beginning on a specified date, the assignce "shall guarantee that the royalty upon elevators erected and constructed by it * * * shall amount to not less than three thousand dollars," did not obligate the assignee to construct elevators each year the royalty on which should amount to \$3,000, but was no more than an agreement to pay that amount if the royalties on the elevators constructed amounted to less.

2. Patents—Contract of Assignment— CONSTRUCTION.

A provision in a contract by which complainant agreed to assign certain patents relating to elevators to defendant that defendant should test the patented apparatus with reasonable diligence, "and, if such test results satisfactorily, within such further reasonable time as is convenient to put such apparatus into practical use," bound the defendant absolutely, having accepted the test as satisfactory, to put the apparatus into some practical use within a reasonable time thereafter, and impliedly to put in all the patented elevators it reasonably could the patented elevators it reasonably could with due regard to its business interests.

3. PATENTS-CONTRACT OF ASSIGNMENT-RECISSION.

Under such contract, which provided for the payment of royalties to the assignor a breach of the absolute undertaking to put the apparatus to some practical use, which would have been satisfied by any use, however small, is not ground for recission of the contract, since such requirement does not go to the whole consideration, but, to entitle the assignor to a recission in equity, he must show that the implied and substantial part of the stipulation as been violated, and that the assignee as failed to exert itself in good faith to install the patented apparatus whenever in reason it was feasible in view of its business and opportunities.

XXTH CENTURY HEATING & VENTIL-ATING CO. v. TAPLIN, RICE-CLERKIN COMPANY.

(Circuit Court of Appeals, Sixth Circuit. June 9, 1910. 181 F. R. p. 96.)

1. Patents—Construction.

The rule is that each claim of patent covers a complete invention, and is in substauce an independent patent.

2. PATENTS — CONSTRUCTION — EFFECT OF ACQUIESCENCE IN REJECTION OF CLAIMS.

If a claim of a patent is itself so changed through action of the Patent Office as to limit it to a particular means for performing a function, acquiescence therein by the inventor estops him from claiming any different device as an infringement, and also acquiescence in the rejection of certain claims for "means" generally, and the allowance of claims describing specific means precludes a construction of such claims which would include other means.

3. Patents — Infringement — Furnace GRATE.

The Maag patent, No. 707,855, for a furnace grate consisting of two parts pivotally connected, the front one of which can be lowered in front to permit of cleaning, in view of the proceedings in the Patent Office, is limited to a construction in which such lowering is done by a swinging bail the turning of which lowers or raises the shaker arm attached to the front section of the grate, sustaining it in each position. As so construed, held not infringed.

MECHANICAL INVENTIONS AND DESIGNS

Patents for which have been procured through the Patent Soliciting Office of E. G. Siggers, Patent Lawyer, Washington, D. C.

Edgar C. Rollins, Call, Texas, inventor: W. H. Newton, Kirbyville, Texas, assignee entire right. Folding Shipping Crate.—The principal object of this invention is to provide a foldable crate, designed for shipping poultry, fruit, vegetables and various other merchandise, and capable of being quickly and compactly folded for returning it to the shipper. A further object is to provide a collapsible crate having all the parts connected to each other, so that there will be no liability of any of the parts becoming lost when the crate is in a folded condition. The crate consists of a bottom, hinged foldable sides, ends hinged to the bottom, and a top connecting the sides, the said top being adapted to fit over the sides and ends when the crate is in a collapsed condition.

James A. Gillespie, and Marvin J. Corey, Coalinga, Cal. Pipe Tongs.— One of the objects of this invention is to provide pipe tongs having a movable jaw element, which is engaged with or released from the pipe upon the initial movement of the handle during the back and forth movement of the wrench in screwing and unscrewing a pipe. Another object is to provide a wrench having a movable jaw element which is released by means of springs so as not to interfere with the reverse movement of the wrench to obtain another bite on the pipe; and also to provide means for limiting the movement of the handle of the wrench for preventing the jaw from biting the pipe with too great a pressure, and for limiting the return movement of the handle to prevent the jaw from being moved into engagement with the pipe by an excessive return movement of the handle.

Anton Speker and Geo. Schneider, Freeport, Ill. Bushing for Bung Holes of Beer Kegs.—This invention has for its object to provide a bushing that will prevent the perimeters of the bung holes of beer kegs from being injured by heat communicated thereto during the operation of pitching and repitching the interiors of such kegs through the agency of superheated steam or air. It comprises an outer ring having an inwardly projecting shoulder formed on one end thereof. and an inner ring having an outwardly projecting flange formed at one end thereof, the inner end and the shoulder of the outer ring respectively co-acting with the flange and the inner end of the inner ring to secure the said rings together, and at the same time forming a closed annular dead air space between the two rings.

Lemuel Patterson, inventor, Olean, N. Y.: D. P. Dailey, Bolivar. N. Y., assignee of one-half interest. Concrete Floor for Buildings.—This invention is particularly adapted for use in concting fire proof buildings, and has for its object to provide an improved construction for floors or ceilings wherein concrete is associated with a plurality of U-shaped sheet metal forming and re-enforcing plates, which are supported at their ends on the lower flanges of parallel I-beams, the plates being separated from each other but connected by intermediate plates. The space enclosed by the Ushaped plates and the space above the connecting plates is filled in with an integral mass of artificial stone which hardens in place, the sheet metal plates thus forming virtually a continuous form for the concrete and a support for the same while it is hardening, and later forming reenforcements for the concrete and covering the lower face of the latter.

Andrew V. Strait, Sidney, N. Y., inventor; assignor of one-fourth each to William Bronk and Frank A. Williams, Oneonta, N. Y. Electric Call Clock.—The main object of this invention is to provide an electrical call device in connection with a clock, whereby an alarm will be actuated at a predetermined time, and which is designed more especially for use in hotels, lodging houses and the like for enabling the office clerk to call the guests at the appointed time for rising. Another object is the provision of an improved switchboard for time clocks and the like, including specially designed contacts, whereby a room number check can be applied to the contacts to electrically connect them, so that upon the closing of the alarm circuit by a contact arm or supplemental hand of the clock mechanism, the signal will be sounded.

Clayton P. Breining, Rockton, Pa. Combined Crayon, Lumber Gage and Tally Pencil.—This device has for its object to provide an article, adapted to be used by lumber inspectors, wherein the several tools needed by the inspector are incorporated in one handy device. It consists of an openended tubular casing, one end adapted to receive a crayon and the other end a pencil, and an intermediate and integral connecting portion forming a gage and having a diameter equal to the pencil-receiving end, the crayon receiving end having a greater interior diameter than the pencil-receiving end and forming an enlarged tubular holder for the crayon; an annular shoulder or flange at the junction of the crayon receiving end and gage, said shoulder forming a stop for the end of the crayon and also a shoulder for the gage, a plurality of marks being provided on the gage to form a scale of inches and fractions thereof leading off from the shoulder.

William J. Ruttan, Hawarden, Iowa. Halter Tie.—One of the objects of this device is to provide a halter tie, to be mounted on a manger or other convenient place, and adapted to enable a halter to be easily fastened and quickly unfastened in the event of a fire or other emergency. It comprises a single piece of material doubled at an intermediate point to form an approximately U-shaped base, a longitudinal loop located at one side of the base and composed of upper and lower portions, a hook-shaped tongue extending from the opposite side of the base in spaced relation with the longitudinal loop, and an over-hanging guard extending laterally from the top of the loop across, and spaced from the hook-shaped tongue, said guard being bowed above the tongue to permit a rope to pass between it and the

Jue Ah Chow, Harlowton, Montana. Kitchen Table.—This invention has for its main object to provide an attachment for tables to be used in restaurants or kitchens, for holding meats, vegetables and the like, for slicing the same by means of an ordinary knife, whereby the slices can be evenly and uniformly cut. The device can be readily attached to or detached from a table, and includes a plate adapted to be projected upwardly above the table top in a position at right angles thereto, to form a rest against which the object to be sliced is held, while at the same time resting on the top of the table, there being an extension leaf which can be used for preventing the slices falling to the

Samuel Enterline, Ridgway, Pa. Cant Hook.—This invention relates to cant hooks, such as are used by lumbermen, and particularly to a method of forming the ferrule of said The main object of this invention is to provide a ferrule blank having one portion of its edges parallel to each other, and the other portion thereof convergently disposed, so that when the blank is bent around to form the complete ferrule, said ferrule shall have a cylindrical portion and a conical portion, the blank being further formed with the edge of its largest end convexly curved so that the socket shall have one side thereof longer than the other and adapted to extend along the stock of the implement.

Louisa Boyd, Stuart, Iowa. Sewing Machine Attachment.—The object of this invention is to provide a workguide attachment for sewing machines, and one which is especially advantageous in gaging the seams or tucks of the goods being sewed, irrespective of whether the work is being done on one side of the presser foot or the other, and it consists of a collar adapted to be adjustably secured on the presser bar above the presser foot, and a reversible work-guide formed from a single piece of metal, having its ends oppositely bent at right angles, the ends of the bent portions forming work-guiding arms, while the intermediate portion of the guide is rotatably and adjustably mounted in the said collar.

George H. Colebeck, Darlington, Wis. Twine Cutter.—One of the objects of this invention is to provide an implement for cutting twine, thread, or the like, which is light in weight, simple in construction, and easy of manipulation, and is adapted to be worn on the little finger of any person. The cutter is formed of a single piece of spring steel wire bent to form a coil preferably of one and one half convolutions, one end terminating in a closed loop which constitutes a stop, and the other end thereof being bent hackward and outward and shaped to form a V-shaped cutter.

James A. Rose, Hastings, Nebr. Two patents.—The object of the invention of the first patent is to provide a gasket and washer cutter. designed for operating on all kinds of sheet packing, and provided with means for automatically feeding the cutting knife into the material and for holding the latter while it is being cut. The invention comprises a frame provided at intervals with perforations, a vertical rotary shaft on the frame, a radially arranged arm carried by the shaft in its rotary movement and movable inwardly and outwardly on the same, a cutter mounted on the arm, and means for feeding the cutter downwardly, including a rotary member carried by the arm in spaced relation with the cutter and having projecting means for engaging the same, and a relatively fixed member located in the path of the rotary member and arranged in one of the perforations of the frame and adjustable radially of the latter.

The invention of the second patent has for its object to improve the construction of the first mentioned patent. and to provide a washer cutter capable of cutting either round or oval washers from any suitable material. It comprises a frame including upper and lower horizontal ways arranged at an angle to each other, slides mounted in the ways, a lower tool carrying shaft mounted on the lower slide, an upper operating shaft carried by the upper slide and having a slot, and an operating arm mounted in the slot of the lower shaft and slidably arranged in the slot of the upper shaft, whereby the upper and lower shafts are adjustably connected to enable them to be arranged either concentrically or eccentrically with relation to each other.

Carlos F. Benitez, of Guadalajara, Mexico. Water Motor.—This invention relates to a motor of that type in which the valve for controlling the admission and exhaust of the motive fluid, which may be elastic or inelastic, is reciprocated directly by the piston of the motor, whereby the piston is alternately reversed or reciprocated. The invention has for its object to improve and simplify the construction and operation of motors of this character, so as to be reliable and efficient in use, and which will be composed of few parts, and be comparatively inexpensive to manufacture, and keep in repair. The motor is provided with a novel arrangement of ports, passages and controlling means, whereby it can be converted from a single to a double acting motor, or vice versa. It consists of a cylinder having exhaust passages near its opposite ends, a piston working therein, a valve casing at one side of the cylinder having exhaust passages registering with the exhaust. passages in the cylinder, a hollow valve body mounted for reciprocation in the casing and provided with separate exhaust ports at its opposite ends which are spaced a greater distance apart than the said exhaust passages. leading to the cylinder, whereby communication between either end of the cylinder and the bore of the valve can be established, an exhaust conduit connected with one end of the valve casing for receiving the exhaustfluid through the bore of the valve at. one end thereof, separate inlet ports arranged in the side of the valve casing, and means carried by the valve for alternately connecting the said inlet ports with the opposite ends of the cylinder independently of the exhaust passages.

Isaac N. Morford, Waynesville, Ill. Three patents.—The first invention is a device to be used in the erection of a wire fence in the field. The object is to improve the construction of such machines, so as to be capable of adjustment to suit any conditions of the ground, in order that the wire stays will be perfectly plumb even when the ground is not level. The construction also permits a more substantial and direct hold on the top and bottom wires of a fence.

The second patent is an improve-

ment on the first, means being provided for enabling a joint or hinge to be made in the vertical stay twisted by the machine. A further improvement relates to the securing of the wire fence machine to the line wires, and maintaining the former in a vertical position irrespective of the inclination of the line wires of the fence; and also to enable the cross heads, which constitute a part of the machine, to be disengaged from the stay with greater facility than in the first patent.

The third patent relates to a wire twister, which embodies a simple, inexpensive and efficient tool, capable of permitting heavy spring wire to be readily coiled or twisted for connecting tie wires with fence wires to secure the latter to the fence post. It is also useful for supplying stays to the fence wires and for various other purposes. The tool is reversible and is adapted to be conveniently operated at either side of the fence post, and permits the fence wires to be placed under the desired tension. It consists of a bar or lever provided at one end with a substantially T-shaped wire engaging member consisting of a stem, and arms extending laterally from the outer end of the stem, the said bar or lever being provided at opposite sides of the inner ends of the. stem with wire receiving openings.



Advertisements inserted in this column for 10 cents a line (about 7 words) each insertion. Every new subscriber sending \$1.00 to The Inventive Age will be entitled to the Age one year and to five lines three times free. Additional lines or insertions at regular rates.

FOR SALE-U. S. Patent No. 980,768, dated Jan. 3, 1911. Oil Can Pouring Spout. Will sell for eash only to the highest bidder. Address, Peter Faure, Porterville, California.

FOR SALE—Patent No. 981,866, patented Jan. 17, 1911. The very latest improvement in hose coupling. Can be coupled five times quicker than the old one. Will sell my rights reasonably. For particulars address, S. R. Lockhart, Buna. Texas.

For SALE — Patent No. 980,193. Drawer Handle. Non-rotatable. Adjusted to any position. Counter-sunk screw inside. Name card attachment. Simple and inexpensive. Address, Sawwa H. Brenia, P. O. Box 104, Olyphaut, Pa.

FOR SALE—Patent No. 986,221. Safety cranking device for automobiles. Prevents crank from injuring man cranking machine. Would like to hear from parties interested. Address, H. W. Saeger, Battle Creek, Iowa, aug

FOR SALE or on royalty—Patent No. 982.130. Resilient steel tire for automobiles or other vehicles. Best spring steel tire ever put on the market. Canadian patent pending. Address, James S. Draper, Texarkana, Ark.

FOR SALE-Patent No. 984,186, dated Feb. 14, 1911. Rim for automobile tires. My new rim dispenses with all tools. Tire can be changed without a tool, easily and quickly. Address, G. H. Bogenhagen, Beemer, Nebr. aug

FOR SALE—Patent No. 974.690, dated Nov. 1, 1910, Miner's Lamp. Has protector or shield encircling the spout. Possesses many points of advantage over the ordinary lamp. Invented by a practical miner. Address, Dominick Miglio, 4082 Elm St., Calumet, Mich. aug

FOR SALE — Patent on Self-Feeding Potato Planting Sack. Price \$200. Drops the potatoes directly into the planter from the sack. If interested write me for copy of patent. A. C. Simonis, R. F. D. No. 1, Box 78, Amherst Junction, Wisc.

For Sale-A wonder at last. An extension single and double iron bedstead, also folding springs and extensiou slats. Patent No. 985,355. Will sell reasonably. For particulars address, S. R. Lockhart, Buna, Texas.

FOR SALE—Patent No. 980,238. For outright sale, Little Daisy Fan Attachment for Dental Engine. It is so simple in construction that it was in operation less than one hour, after first thought of. It is perfect and has no competitor. Address, Dr. J. S. Frisbie, D. D. S., Rotan, Texas.

FOR SALE or lease—U. S. Patent No. 971,517, recently granted. Fluid Motor, Very valuable device comprising valve-gear to be used with all kinds of motive fluids. Dead center absolutely avoided. No fly-wheel needed. Simplicity of construction with other advantages. For particulars address, Carlos F. Benitez, 141 Ocampo St. Guadalajara, Mexico.

For Sale-Patent No. 974,787. Drawers designed for athletes, soldiers and others who ride horseback or bicycles. Address, Hannah Goldsby, Wauchula, Florida.

FOR SALE — Patent No. 981,052. Manure Loader; Patent No. 976,250, Walking Rake. Will sell reasonably. Investigate for your self and make me an offer. Address W. F. Bohling, Arcadia, Iowa. jun

For Sale-Patent No. 975,553. Anti-slipping attachment for horse shoes; applicable to any shoe. Address, James May, P. O. Box 61, Mineola, L. I. New York.

POR SALE-U. S. Patent No. 976,289, dated Nov. 22, 1910. Lamp burner with two narrow wicks, in place of one wide wick, which does away with any high side to flame, Will accept best offer, royalty or cash. Address, A. M. Porter, Amsterdam, Mo. jun

FOR SALE—Patent for Changeable Gear for Bicycles. High, low and intermediate gear immediately available to the rider without dismounting. The variations are controlled by foot. The only real improvement in bicycles for years. Simple and inexpensive. Prospective purchasers, address, J. M. Fleming, Pensacola, Florida, inc.

HOR SALE—Patent No. 988,413, for Non-Refillable Bottle, Address, James Veno, General Delivery, Vancouver, B. C., Canada.

ROR SALE outright or on royalty — Patent No. 982,568, dated Jan. 24, 1911. Automatic Mail Bag Catcher and Delivering Device. Exchanges mails from fast trains. Will accept best offer, royalty or cash. Correspondence solicited. Address, Charles E. Boone, Elk Creek, Neb.

FOR SALE-U. S. Patent No. 981,540. A rotary engine. The best ever made. For terms of sale apply to M. A. Dooley, Cary Station, Ill. jy

POR SALE—Several good patents. Direct from owners. No commission. Address. Advertisers Co-operative Association, Chicago, Ill. jy

For Sale — Patent No. 887,552. Improved Tongs. Two ways of using them. Can be made to hold large or small articles. Address, James Veno, Vancouver, B. C., Canada. oct

For Sale outright or on royalty—Patent on sanitary case for comfortables. Splendid device. Unlimited demand. Address, A. C. Caldwell, No. 633 14th St. Oakland, Cal. jy

FOR SALE—Patent No. 976,737, dated Nov. 22, 1910. Well Packer. Designed to pack bottom and top of gas strata to prevent water from rising in bottom of gas or oil well. Address, William Hemme, Altoona, Kansas.

FOR SALE — Canadian Patent No 125,147. Wanted parties in Canada to manufacture my combined two part pad-locking whip socket; also in U. S. royalty or cash. Address, Severin Lilland, Jewell Juuction, Iowa. jun

FOR SALE—Patent No. 969,081. Drill sharpener for hand steel for mines and prospectors. Very simple, and can be manufactured at small cost. Write for terms. Address, R. A. Schmidt, Bayard Station, New Mexico. jun

FOR SALE-U. S. Patent No. 8°2,1°3, dated Jan. 30, 1908. Automatic cut off for natural gas to prevent explosions. Excellent proposition. Write for particulars to, J. H. Stanton, St. Catharines, Ont., Canada, jun

FOR SALE—Would like to sell outright or on royalty Patent No. 675,336. A guard for receptacles for whipping cream. Investors interested in the same. please address, Norah M. Doherty, Pleasant View Farm, Vernon Centre, Connecticut.

FOR SALE-U. S. Patent No. 974,411; Canadian Patent No. 129,289. Combination Rail Brace and Nut Lock. Prevents low joints, rails spreading, rails turning laterally. All nuts locked against turning movements, avoiding expense of track walkers. Can be used at either joints or intermediate points to best advantage, thus avoiding serious wrecks. The best combination brace yet invented. Will consider any reasonable offer, either outright or royalty and part cash. Address, C. Maunders, Jackson, Minn.

WANTED.

ANTED a Company in the U. S. to manufacture my saw-fitting device, patent No. 972,789, dated Oct, 10, 1910. Also a company in Canada to manufacture same device, Canadian Patent No. 124,345, dated March 8, 1910. I will sell either or both of said patents. Address, C. R. Pierce, Rainier, Washington.

WANTED-Agency propositions. What have you to sell? Address, Ernest Morse, Luverne, Minn.

WANTED—Two or three persons with some capital to correspond with a patent owner of a new meritorious article. Practice on model very satisfactory. Will not sell patent but will join in company, Address, F. D. F. Box 28, Waterbury, Conn.

WANTED—Not for sale but want a company to manufacture my manure loader on royalty, Patent No. 918,695. Address, Lars C. Peterson, Osage City, Kansas.

WANTED—Partners for foreign patents on whip socket lock, for share in patents. U. S. patent allowed. Key remains in lock when whip is loose. One-half turn of key locks whip, When whip is locked key is removed. The harder the pull the tighter the grip. For particulars address, Clarence S. Skinner, Payne, Ohio. jun

WANTED—Four (4) men to loan me \$100 each, for four years, at 6 per cent to help me to push four (4) good paying toy inventions, for which I will return to each of them their loan, and I will give also to each loaner 10 per cent of all the income from sale of said patent inventions in whatever way I may dispose of said patents, Here is your chance. Who will accept. Address, E. W. Barton, No. 35 Carroll St., Binghamton, N. Y. jun

ANTED—A company to manufacture a bag holder made of sheet iron. U. S. Patent No, 968,349, dated August 23, 1910. Will have patent for Canada in a short time. Address, Louis Hanson, Cottonwood, Idaho, jun

Electrical Review and Western Electrician

Published weekly from the center of the industry, this publication is in the best possible geographical position to gather and present the most important and interesting news of the entire electrical industry.

SUBSCRIPTION PRICE

U.S. \$3.00 per year, Canada \$4,00 per year, Foreign Countries \$6.00 per year. Sample Copy Free

It is seen and read by practically every buyer of electrical material in this country and abroad. Advertising rates on application.

ELECTRICAL REVIEW PUBLISHING CO., 507 Marquette Bldg., CHICAGO.

A NEW BOOK FOR INVENTORS Patents and How to Make Money out of Them,

By W. B. HUTCHINSON.

This is the only book published, giving a detailed and full account, from the author's actual experience, of just what steps are necessary from the time the invention is conceived, to the time it is sold, with a clear and concise resume of the law and practice, legally and commercially, of trade-marks and copyrights. It also tells accurately How and What to invent. How to sell Inventions, Place them on the Market, Interest Capital in them, and to successfully Promote a Stock Company. It also contains an index of forms worth double the price of the book to any one interested.

ELEGANTLY CLOTH BOUND.

GOLD STAMPED. \$1.00 Postpaid.

Sent with one subscription to AGE for \$1.50.

Or will sell separately.

Address— The Inventive Age Pub. Co., 918 F St., N. W. WASHINGTON, D. C.



A VALUABLE OFFER TO INVENTORS.

A Complete Outfit of Printed Matter for \$20.

- 1. A zinc etching of your invention for use in printing letterheads, envelopes, circulars, etc.
 - 2. One thousand printed circulars.
- 3. Five hundred envelopes with your name and address printed in the corner.
- 4. Five hundred letterheads with a cut of your invention, and your name and address neatly printed thereon.
 - 5. A list of manufacturers in the special line of your invention.
- 6. A form letter to be followed in conducting your correspondence with manufacturers and others.
- 7. Four dozen deeds useful in selling state, county, town or shoprights.

 Address:—

INVENTIVE AGE PUBLISHING CO. Dept. O. WASHINGTON, D. C.

ATTENTION INVENTORS!

LISTS OF MANUFACTURERS FURNISHED.

We have increased our facilities for furnishing lists of manufacturers, and now cover every line of industry. The names are obtained from well known directories.

Our charge for each list is one dollar.

In ordering, please state specifically the class of manufacturers desired. Address: Inventive Age Pub. Co., Dept. M. 918 F. St., Washington, D. C.

Every subscriber when sending \$1.00 is entitled to a free advertisement, not exceeding five lines, of any patent in which he may be interested. The ad, will be inserted three times.

THE INVENTIVE AGE PUBLISHING CO., Washington, D. C.
I herewith enclose \$1.00 for one year's subscription to
"THE INVENTIVE AGE."
I also enclose ad. for insertion in the (Patents for Sale*) (Want*) column of your paper.
NAME
P. O
State

*Please indicate in which column you want the ad. inserted.

N. B.—Remit in the way most convenient.

#79 noentive age

Established 1889.

Published monthly by

THE INVENTIVE AGE PUBLISHING CO.,

National Union Building, 918 F Street, N. W., Washington, D. C.

THE INVENTIVE AGE is sent, postage prepaid.
to any address in the United States, Canada,
Mexico. Hawaii, and Porto Rico, for ONE DOLLAR
a year: to any other country, postage prepaid,
ONE DOLLAR AND TWENTY-FIVE CENTS.

Correspondence with inventors, mechanics, patentees, and manufacturers, is invited. The columns of this journal are open for the discussion of such subjects as are of general interest to its readers.

Technical matter is particularly desired. We want practical information from practical men.

THE INVENTIVE AGE is independent.

Special facilities for furnishing cuts of any patented device together with descriptive article. Business specials 10 cents a line each insertion: 7 words to the line. No advertisement less than 25 cents.

Address all communications to

THE INVENTIVE AGE PUBLISHING COMPANY,
WASHINGTON, D. C.

Entered at the Post-office as 2nd class matter.

WASHINGTON, D. C., JUNE 1, 1911.

THE BOARD OF EXAMINERS-IN-CHIEF OF THE PATENT OFFICE.

A Condition Which Should be Remedied.

When an application for a patent is rejected by the Primary Examiners of any one of the forty-three divisions of the Patent Office on the ground that the invention is not patentable, the applicant is permitted to take an appeal to the Board of Examiners-in-Chief, a tribunal composed of three men who have been advanced to their present positions by promotion from the examining corps. Again, when the question of priority between two or more applicants for patent for the same invention is under consideration, and the Examiner of Interferences renders his decision in favor of one of the applicants, the other applicant may take an appeal from the decision to the Board of Examinersin-Chief. Thus, it will be seen that the time of this tribunal is largely occupied in considering questions of patentability and priority. Though appeals on the question of patentability require much thought and attention, appeals on the question of priority bring into play all the acumen and prescience of the trained judge on the bench.

The Board of Examiners-in-Chief usually consider in the neighborhood of 1200 appeals each year. We have no data as to how many of these cases involve questions of patentability, but we imagine the proportion would be about one-fifth on the question of priority and four-fifths on the question of patentability. The interference cases, or those concerned with the question of priority, involve the greatest amount of work. Printed records containing the testimony taken on both sides must be carefully read. The exhibits have to be studied, and the briefs compared. All this work must be done by the three members of the Board of Examiners-in-Chief without any law clerk or the aid of any assistants. The Commissioner of Patents and the two Assistant Commissioners have two law examiners or law clerks to study the testimony in interference cases appealed to them and to write out their conclusions; but the Board of Examiners-in-Chief must not only read the testimony on their own account, but write the decisions in each case. The only assistance they have is that afforded by such stenographers as may be assigned to them.

The hearings before the Board of Examiners-in-Chief commence at 1 P. M. and frequently continue until 4 P. M. Ten cases are often assigned for hearing each afternoon. As the hearings are held each day, about the only time the members of the Board of Examiners-in-Chief have to study their cases is in the morning and on Saturday. It is a well-known fact that members of the Board of Examiners-in-Chief have frequently been compelled to do a great deal of night work without pay in order to keep up the work. The position is an exacting one, and it is the poorest paid, for the services rendered, of any in the Patent Office.

Several years ago a successful effort was made to raise the salaries throughout the Patent Office, but at that time this tribunal was overlooked. The Commissioner of Patents receives \$5000 a year, the First Assistant Commissioner receives \$4500, the Second Assistant Commissioner \$3500, while the Examiners-in-Chief get only \$3500. It seems to be generally conceded that the salaries of the Board of Examiners-in-Chief should be raised to \$4500, so as to be equal to the salary of the First Assistant Commissioner. Because of the inadequate salary attached to this office, and the arduous work required to be done, several valuable members of the Board have been lost by resignation. The constant changes in the personnel of the Board are hurtful to the best interests of the Patent Office. Within our knowledge two members of the Board were recently induced to resign and go into private practice because better offers were made from outside sources. The Board of Examiners-in-Chief does the same work that is done by judges on the bench, being required to consider testimony and pass on closely involved questions of law and fact, and an increase of \$1000 per year for each member, or a total of \$3000 for that tribunal, is justly deserved.

We urge our readers, and every one who has any influence in the halls of Congress, to write to their senators and representatives, and request them to take steps at the next session of Congress to increase the salaries of the Board of Examiners-in-Chief. When Congress meets in session December next, another opportunity will be given to remedy this condition, and all friends of good administration within the Patent Office should rally to the support of the proposition that the Board of Examiners-in-Chief should be given remuneration commensurate with the importance of the work it does, so that the changes in this tribunal of the Patent Office, on account of outside inducements may cease.

MANUFACTURING BEFORE OBTAINING PATENT.

One frequently sees articles on the market stamped "Patent applied for," and the question is asked what protection is given to an inventor in manufacturing his invention while an application for patent is pending. The patent statute accords him no protection. Section 4899 provided:

"Every person who purchases of the inventor or discoverer, or, with his knowledge and consent, constructs any newly invented or discovered machine, or other patentable article, prior to the application by the inventor or discoverer for a patent, or who sells or uses one so constructed, shall have the right to use, and vend to others to be used, the specific thing so made or purchased, without liability therefor."

This section clearly defines four classes of persons who shall have the right to use and vend to others to be used a specific patentable machine. First, every person "who purchases of the inventor" the machine before his application for a patent. Second, every person "who with his knowledge and consent constructs" the machine before the application. Third, every person "who sells" a machine "so constructed," that is to say, which has been constructed with the knowledge and consent of the inventor by another person. Fourth, every person "who uses one so constructed," that is to say, constructed with the inventor's knowledge and consent by another person.

If, for instance, an inventor is employed in a factory and he invents a machine for making fences, and he permits his employer to construct a half dozen of those machines, the employer may use those machines until they are worn out, notwithstanding any patent which the employee may subsequently obtain on the machine.

If, however, another than the inventor secretly obtains knowledge of the invention, and without the consent of the inventor, makes a specimen of the invented thing before any patent thereon is applied for or obtained, that specimen will be covered by the patent, when the latter is issued, as truly and fully as it would be if it had been made by the infringer after the date of the patent. In other words, where the manufacture of the patented article or machine has been done with the consent and knowledge of the inventor, then the one who made the patented article or machine may continue to use the same after the inventor secures a patent on the article or machine; but if the article or machine was made without the knowledge and consent of the inventor, then as soon as the latter secures his patent. he can immediately step in and prevent the article or machine from being

The question naturally arises what is the advantage of putting "Patent applied for" on an article or machine, which is manufactured while an application for patent thereon is pending. There is really no necessity for it, and

there is nothing in the patent law which requires or authorizes it. A person may put "Patent applied for" on an article and yet never apply for a patent, and he would violate no law. Nobody could ever find out if he had applied for a patent, for all applications for patent are secret, and if a person were to write to the Patent Office with a view of ascertaining whether or not a particular manufacturer had applied for a patent on a device marked "Patent applied for," the Patent Office would refuse to give the information. What then is the object of putting "Patent applied for," or the equally common expression "Patent pending" on an article? As far as we can see it is simply a notice to the public that an application for patent has been filed on the device, and the public is warned not to manufacture the device, or purchase it from others than the true manufacturer, because a patent having been applied for, the public in making purchases from improper sources must take a risk. In many instances patents may never be obtained on the articles so marked, and it seems to be generally understood nowadays, that where the words "Patent applied for" appear on a manufactured article, it is an indication that a patent is difficult of obtainment. Nevertheless, it acts to scare off the ordinary infringer, though it fails to have any effect on the man who knows something about patents, and who ascertains by investigation, the likelihood of obtaining a patent on the article.

UNFAIR LICENSES.

A Defect in the United States Patent Law.

Recent hearings before the United States Senate Finance Committee, as a result of the testimony given by interested parties, have brought into the lime-light certain phases of the patent law and the way patents encourage monopolies. It is believed that the day is not far distant when some legislation must be enacted to modify, in part, the monopoly which a patent affords

It started in the House of Representatives with the introduction of what is known as "the farmer's free list," included in which are "boots and shoes." Members of Congress. have been studying the shoe industry of the United States on the theory that the conditions on which shoe machinery is leased are such that it is impossible for shoe manufacturers to sell their shoes at a reasonable price. Certain manufacturers of Chicago and St. Louis, during the hearing before the Senate Finance Committee, made the allegation that the United Shoe Machinery Company, of Boston, Mass., holds the makers of foot wear in a merciless grasp, from which their is no escape. All makers of foot wear are required to sign seventeen-year contracts for leasing the machines of the trust, the rental per year for one stitching machine being \$1200. It was declared that the stitching machines. could be purchased abroad at less than the price of one year's rental.

9

The duty of 45 per cent did not prevent them from being brought in, but if they were, the shoe machinery trust would at once withdraw all of their other machines and leave the manufacturer entirely crippled. The trust places some of its machines abroad, but does not require manufacturers there to sign seventeen-year contracts. Under such contracts competition was impossible.

This testimony so stirred up the law makers, that several bills have been introduced in Congress to remedy the situation. As most of the shoe machinery is protected by patents, it was naturally assumed that the best method of attack was to propose an amendment to the patent laws. Representative Peters of Massachusetts introduced a bill to amend the patent laws which, while general in its terms, is believed to be aimed at the United Shoe Machinery Company. It provides that no holders of letters-patent of the United States shall make it a condition or provision of the sale or license to use any tools, that the purchaser shall not buy for use with such article, tools other than those made by the licenser, nor shall such owner of patents revoke the license to use them in the event of the licensee using such machinery purchased from another person.

Mr. Peters commenting on this bill said: "Certain corporations are now making provisions on patented machinery, whereby the person who hires the machinery from them is also obliged to purchase from them all the tools and machinery. This is clearly against public policy. The largest and most conspicuous concern connected with this form of lease is the United Shoe Machinery Company. This company owns certain very necessary patents for the manufacture of shoes. In its lease of this machinery it puts a provision which compels the licensee to purchase or hire all of its machinery from them. In this way it is stifling competition in the manufacture of shoe machinery. The action of this company is much more likely to result in injury to the shoe trade than any reduction of the tariff. Other countries are already recognizing this. England has passed a law similar to the one I have introduced here, and it is interesting to note that the English law was passed as a result of the United Shoe Machinery Company trying to do the same thing in England, which it is doing unrebuked in this country."

A study of the English laws shows to us that Mr. Peters is correct in his statements concerning the provisions of the English patent law. Many years ago it was the custom for American manufacturers to attach conditions when selling their machines or articles in England, requiring the licensee to purchase other articles than were covered by the patent from the manufacturer, and also requiring that exclusive dealing should continue with the manufacturer for a period of years not limited by the term of the patent. As a result for that is practically what it means, Parliament passed a law, which defor using a machine which they have clared such unfair licenses as void. already purchased. They could no

The insertion of similar conditions in a license will make it a ground upon which the patent can be revoked, and upon which any infringer can successfully resist an action for infringement by the defense he will then be able to set up, because of an unfair license that may have been granted to another person.

It other words, not only is the license void, but the patent itself may be infringed at pleasure, and steps may be taken for revoking the patent. These are somewhat drastic provisions, but evidently the British Parliament felt that the conditions confronting them required harsh treat-

Following the introduction of the bill by Representative Peters, Senator Gore of Oklahoma wants an investigation into the method of leasing, selling and controlling patented articles in the United States, and asks that a law be passed to compel owners of patented machinery to lease it without discrimination. That some good will come out of this agitation, there seems to be no doubt. If the United Shoe Machinery Company were the only offender, it would be bad enough, but the practice is growing and it will do more than anything else to bring patents into bad repute.

Another instance of how this same doctrine of contributory infringement may be extended is shown in the case of A. B. Dick & Co. v. Milwaukee Office Specialty Co. It appears that the A. B. Dick Co, is the manufacturer of a stencil printing machine known as the "Rotary Mimeograph." These machines are never sold outright, but are offered for sale under license contracts, which provide that they shall be used only with ink made and sold by the A. B. Dick Company. The Milwaukee Office Specialty Co. sold ink to owners of machines purchased from the A. B. Dick Company. The court in passing on this case held:

"It is within the right of the manufacturer of patented printing machines called the "mimeograph" to sell the same under license contracts providing that they shall be used only with ink made by the seller, and third persons who with knowledge of this restriction, sell a different ink to owners of the machines intending that it shall be used with such machines, and which is so used, are chargeable with contributory infringement which entitles the owner of the patent to an injunction."

In other words the Milwaukee Office Specialty Co. were prohibited from selling ink to the owners of the machines called the "Mimeograph." The ink was not patented and formed no part of the patent. The patent covered the machine, but simply because the machine was not sold outright, but was disposed of on a license contract requiring the purchaser to purchase the ink used in the machine from the manufacturer of the machine, then the purchaser of the machine was compelled to pay a perpetual license,

doubt get the ink much cheaper than from the A. B. Dick Company, but the courts say "No!" they must purchase the ink from the A. B. Dick Co. and pay two or three times the price that they would have paid elsewhere for the same grade of ink. It is just such decisions and such practices which are tending to make the patent monopoly odious to the general public. Some action should be taken to restrict the patent monopoly so that when a man sells a machine or an article, no conditions may be attached to the sale that shall in any way interfere with the free use of the machine. We commend the bill of Representative Peters as being in the line of true progress. We do not believe that the interests of inventors will in any way be materially affected thereby.

Stomach Telescope.

A stomach telescope, or gastroscope, invented by one of the staff of a London hospital, is in continual use in that institution and has proved of the greatest value in the diagnosis of stomach disorders. It enables the physician to actually see for himself the exact condition of the whole of the interior of the stomach, the slightest ulceration, growth, or other abnormality in the membrane being thus readily observed. That such an instrument is of very great importance can be clearly understood from the fact that a cancer of the stomach, if found at the earliest stage of its growth, can sometimes be cured by prompt treatment.

Wireless Light and Sound.

For some time it has been found possible to send lighting currents without wires, the power being transmitted over distances of several miles and the lights burning for hours steadily. Now, by an extension of the wireless telephoneidea, music is being transmitted in the same way. Opera arias were recently sent from New York city to Newark, N. J. The sound was transmitted with complete success, the music, though seeming to come from space, conveying accurately every variation of the singer's voice, as if one were listening to a miniature phonograph in which all scratching and metallic vibration were absent.

Diamond Sorting Machine.

The story of the invention of the machine that almost entirely superseded the hand-sorting of diamonds in the African fields, is interesting. The hard, diamond-studded earth lifted to the surface from the mines is spread over the ground to undergo the softening influence of heat and cold for several months, after which it is shoveled into washing machines, where the dirt is separated from the stones. The mass of minerals remaining is known as "concentrates" and this was once picked over by hand to select the garnets and diamonds. One day an employe happened to raise a board on which a rough diamond and garnet were lying. The garnet slid off and the diamond stuck. Examination showed that the board was coated with grease. This gave the inventor his idea. He got a large board, covered it with grease, and dumped a few handfuls of concentrates on it. By holding it in an inclined position and vibrating it, all the minerals moved off, and the diamonds remained. From this the present machine was developed.

Panoramic Pictures.

Photographers are familiar with the ordinary panorama camera that takes strip pictures on a long film. In this apparatus, the lens is set on a pivot. and swings around, throwing a brush of light across the film until the whole arc of its field is covered. An improvement on this device consists in causing the whole box to move. A cog track, circular in shape, crowns the tripod. Similar cogs on the under side of the box play in these and carry the camera in a complete circle, or such part thereof as the photographer may wish to use. The camera is driven around the turn table by clockwork. Inside the camera, in the back, are two spools, as in most film cameras. On one of these spools the roll of film. 16 feet long and 10 inches to a foot in width, is placed. A strip of black paper, 18 inches long, extends across the back of the box to the other spool. Both of these spools are actuated by other clockwork, which unwinds the full spindle and winds it on the other one, keeping both at exactly equal rates of speed, so that there is no buckling or other interference with the

This strip of film, then, moves in an opposite direction to that which the box takes in its revolution around the tripod turn table. The lens is stationary and ends in a narrow, perpendicular slit, ten inches high and less than a quarter of an inch in width. This paints, as with a brush, a bar of even light across the film, giving an equal exposure to all parts—in fact the back end of a lens of this kind, in photographic parlance, is called a "brush."

Thus prepared, the photographer takes off the "loaded" back side of the machine, in which the film is protected by a slide which closes automatically, presses a button, and a ground glass focusing screen slides up into place. On this he focuses his picture as with an ordinary bellows machine, replaces his film carrier, and is ready to make his picture.

First, however, he must figure out the speed at which the lens and the box are to move around the section of a circle which he wishes to photograph. Having done this, he must estimate at what speed the film shall move across the back of the camera, also in motion, so as to produce a full, clear negative. Poor focus, undertiming, overtiming and uneven exposure, all must be eliminated. This sort of panorama photography is no game for the man who is in a hurry.

Having calculated all this by means of proportion tables, be sets his lens, takes two bulbs with which the camera is equipped, one in each hand, presses them both, and the picture begins to be made. One of the bulbs starts the clockwork mechanism, the other opens the shutter. When the camera has completed the whole circle, or the segment for which it is set, the clockwork stops automatically and the shutter closes in the flash of an eye. A film sixteen feet long or any fraction thereof can be made at one exposure by this really remarkable machine.

CLASSIFIED list of Patents issued during the month appears in each issue of the Inventive Age. This keeps inventors and manufacturers posted in the art in which they are most interested. —We will send. postpaid, to any address, printed copies of any U. S. patent, with specifications and drawings, upon receipt of 10 cents per copy.—Please give correct data in ordering.—Address.

THE INVENTIVE AGE PUBLISHING CO., 918 F St., N. W., Washington, D. C.

LIST OF PATENTS

Issued April 4, 1911.

MECHANICAL PATENTS.
(Continued from May Number.)
RefrigeratorO. Philippi RelayJ. B. Struble Relays, Means for correcting sensitive
Refort-furnace
Rolling mill, Seamless-tube
Rubber disks, &c., Machine for cutting
Rubber strips, ProducingJ. F. Ott Bulle and level, PlumbW. O. Graham Sash construction, Metallic window
Rubber strips, Producing. J. A. Anderson Rubber strips, Producing. J. F. Ott Rule and level, Plumb. W. O. Graham Sash construction, Metallic window. W. Schmidt Sash-fastener. E. and S. P. Patenande Scaffold, Roof. F. E. Parris Scale-light. W. J. Freeman et al. Scale rail-joint, Weighing. R. S. Bohannau et al. Scraper J. E. Smith
Scraper. J. E. Smith Sereen-rim. P. H. Baack Screw-slitting apparatus. D. Millington et al. Scribing device. J. Rossell
D. Millington et al. Scribing device. J. Rossell Sealing device, Envelop II. York Scaling machine, EnvelopW. E. Jackson Sealing means for vacuum-jackets
Seam-setting mechanism. J. Nazel Selecting system, Automatic. F. Schoenwolf Sewer and culvert pipe. R. F. Hersfield Sowing machine, attachment
Shackle J. R. Morse Shade and curtain-rod fixture, Extension
Scribing device. J. Rossell Sealing device, Envelop
Shock-absorberM. and R. Block Shoe, Combined lace and buttonJ. D. Price
Shoe-upper fastener. W. E. Ellis Show-case fixture. A. Yoakum Sidewalk-tool. W. S. Glasscock Sight device Telescope-
Silo-reinforcing means. P. B. Naylor Skate, Roller- J. Zverina Skirt. M. E. Kelsey Sled-runner. A. Wagner
Sleigh, MotorD. F. Hirschkorn Slip-pocketL. E. Nebergall Smoke-consumer for low-pressure boilersA. G. Krieg Sod and potato-vine cutterR. L. Nowell Soldering apparatns, Chain-link
Soldering apparatus, Chain-link
Soldering apparatus, Chain-link
Spike
Spindle-step, AdjustableT. Bentley Spinerets for use in manufacture of artificial silk, MakingC. Woegerer Spinning headJ. Buckley SpoolC. A. Brinley SpoolC. A. Chelming
Spring. H. B. Chalmers Spring. W. J. Phelan Spring. H. F. Nehr Spring construction. L. A. Young Spring-hook. T. D. Owen Spring-wheel. J. Sharp Spring Amblying bands onto logf-
Spring-wheel. J. Sharp Springs, Applying bands onto leaf J. R. Blakeslee Square and rule Combined P. P. Oats
Square and rule, CombinedP. B. Oats StackerG. de Wattripont Stucker fork, HayG. L. Curtis Stair, MovingA. Swanson Stalk-cutterC. A. Wilson Stall, AnimalH. L. Ferris StanchionS. C. Swift Station or street indicator
Station or street indicator. A. Verhoven et al. Steam-beiler J. L. Jensen et al. Steam-separator. J. E. Sweet Steam-trap. J. E. Purser Still. J. T. Davls Still, Triple-purification waterJ. A. Power
Stoker-feeding apparatns, Mechanical E. D. Newkirk Stone-dressing toolF. Strandberg Store-counterR. D. Ralston

Stove, Water-heating gasA. Tosco Stuffing boxW. Mosley Suit-caseF. Holland Sulfuric anhydrid, MakingJ. McFetridge
Sulfuric anhydrid, MakingJ. McFetridge Surgical forceptsW. H. Hndson Switches, Mechanical movement for endcellJ. W. Achard Synchronism between the rotation of one or more electrically-driven machines,
Method and means of producing E. L. A. Lertourne Tack-pulling tool. J. B. Hadaway Telegraph system, Cable I. Kitsee Telegraphy. L. M. Potts
Telegraphy. L. M. Potts Telegraphy. I. Kitsee Telephone receiver shell. J. Halldow Telephone system, Central. J. D. Holmes Telephone-transmitter. C. R. Rogers Telephony Kitsee
Telephonyl. Kitsee Telescope, PrismH. Korrodi et al. Tensiouing deviceC. Corley et al. Tent. (2 pats.)C. H. Stouebridge TentR. W. Davis Threads, Mannfacturing artificial
Threads, Mannfacturing artificial. E. Bechtel Tilling-machine. G. Spalding Tilling-nuchine moldboard. G. Spalding
Tire. W. A. Koneman Tire, Cushion- C. L. Drake Tire-holder. W. F. Bright Tire-rim. F. M. Miller et al. Tire, Vehicle-wheel. E. B. Killen
Tire, Vehicle-wheel. E. B. Killen Tool and implement, Hand-operated. J. H. Franklin Tool, Compound. M. H. Tyler Tooth, Artificial. T. McCullough
Tooth, ArtificialT. McCullongh Tooth-crowns, MakingE. Mohr Toy electric movementW. G. Viall Toy-railway-car governorE. R. lves
Track-intersection structure
Track-intersection structure
Turbo-generators, Unipolar exciter for Typo-writor W. P. Widder Typo-writor
Type-writer back-spacer. G. W. Davis Type-writing machine. F. A. Young Umbrella, Folding. L. J. Whitaker Umbrella-supporter. J. C. Mitchell
Type-writer. W. P. Kidder Type-writer back-spacer. G. W. Davis Type-writing machine. F. A. Young Unbrella, Folding. L. J. Whittaker Umbrella-supporter. J. C. Mitchell Umbrella-tip. J. H. Sprague Valve device, Triple- J. S. Custer et al. Valve, Fluid-operated. E. P. Noyes Valve for water-tans. W. Leutz
Valve for water-taps
Vehicle safety device. J. B. Stranss Vehicle suspension. W. S. Palmer Vehicle-wheel. J. B. Adt Vehicle whylesergens Oscillating device for
Vehicle-wind-screens, Oscillating device for motor
Ventilating device. L. S. Hackney Ventilator. H. Obermann Vessel construction. R. O. King Voltage-regulator, Automatic, (2 pats.) G. A. Burnham
G. A. Burnham Voting-machine. A. McCarty Vulcanizer. T. G. Lewis Vulcanizer-press. A. Adamson Wagou-hottom, Sectional M. S. Bowdish Wagon-brake. A. Wagner Wagon-reach. J. Spanlding
Water-motor, Oscillating. A. Anderson Water-sprinkler. W. Wittekopf Wave-power system. A. L. Reynolds Weaving-machine matching device.
The description of the Community of the
Weighing liquids contained in storage-reservoirs, Device forT. Hillmer Wheel
Winding-infelline, Fower, J. W. Minde Windlasses, Automatic trip and brake device for. C. Andrake, Jr. Window. W. F. Hiatt Window-gnard. S. Rosenzweig Window-lock. T. Jory Window-screen T. E. Barton
Window-screen
Wood-skinning machine. C. H. Carter Wood-turner's tool-rest. H. C. Diedrich Work-centering device. M. J. Fogarty Wrench. R. Geoffrey Wrench. G. Brodhagen
Wrench

Issued April 11, 1911.

MECHANICAL PATENTS.

Acetyl cellulose, Solvent for....T. Beeker Acid, Apparatus for the manufacture of sulfuric...O. Proelss Adding and listing machine....J. P. Harrison, Jr. Aerial apparatus of the heavier-than-air elass...J. J. Donnelly

Aerial conduit and cable-gnard	Con
Aerial navigation	Cor
E. M. Van Nostran Aerial navigation. J. Means Agricultural-machine steering-gear attach ment. W. C. Lorenz Air and steam coupling, Antomatic safety. C. R. Dick	Cor
Air and steam coupling, Antomatic safety.	Cor
Air-brake G. O. Galbraith Air-brake safety attachment, Automatic	Cor
E H Hamilion	Coc
Air-brake signal	Coc
AirshipJ. W. Wadsworth	Coc
	Cra
Alarms and other devices, Apparatus for operatingG. I. Rockwood	Cra
operating. G. I. Roekwood Alfalfa-mill. J. Jorgensen Animal-shears. E. A. Larson	- Cra Crt
Armor attachment, Submarine	-Cul -Cul
. C. E. Macduffee Armor, Snbwariue	(ful)
Ashes-elevator, TelescopicF. Grotenrath Antomobile spindle deviceII. Walker	Cui Dai
Automobiles, Auxiliary folding seat or	Da: Dei
Antomobile spindle deviceII. Walker Automobiles, Auxiliary folding seat or E. G. Pandow Awning attachmentC. Richards Axle, Differential carE. Deutsch	Der
Bag and the like filling apparatus. J. T. Hill Baling-pressO. L. Bowers	Dei
Baling-press Bowers Baling-press	Dis Dis
Ball-grinding machineW. B. Hasselkus Bearing mounting, Ball	Dis Dis
Bearing mounting, Ball	Diy a
Red-spring, FoldableW. Thompson	11
Bed-spring, Adjustable. A. M. McGiff Red-spring, Foldable. W. Thompson Bench-shears. S. W. Hassler Berth, Sleeping. W. H. Taylor Rinder, Loose-leaf. J. C. Dawson	Div
	Div n
Boiler furnace, SteamT. R. Butman Rolt-anchorJ. E. Ogden Boring-machine, Multiple-bit.A. E. Crandell Rottle Elling machine.	Do:
Rolt-anchorJ. E. Ogden	$-10r_{\rm c}$
Double-Hing machine Jensen	Dri
Bottle-grinding deviceL. J. Crecelius Bottle-uecks, Finnel-attachment device for.	Dri Dri
Bottle, Non-refillable. E. S. Parslow et al.	Dri Dr
Box-clamping machineC. N. Lambert	
Bracket. J. J. Tokheim Brake-hanger mounting. F. R. Cornwall	Du f
Brake slack-adjusterC. L. Bundy Bread Making dishetic A Pfeffer	11
Brake slack-adjuster C. L. Bundy Bread, Making diabetic A. Pfeffer Brick, Interlocking P. Yengst Bridle-bit G. E. Biggart Bucket holder, Paint A. Anderson Bucket, Vented valved funnel- F. E. Browne	$\frac{\mathrm{D} y}{\mathrm{D} y}$
Bucket holder, Paint	leg: Effa
	El∈
Buckle. H. G. Kelsey Building-block. E. J. Forbes Burnette-holder and pinch-cock, Combined.	$ ext{Ele}$
Burnette-holder and pinch-eock, Combined	Ele Ele
Button-fastening tool or device. E. Berning	Ele
Cabinet, RibbonH. E. Blevins et al. CableC. D. Seeberger Calculating-machineM. Klein et al.	Ele
Calculating-machineM. Klein et al. Calculating-machineE. Leder	
Calculating-machineE. Leder Cam brake, EccentricA. Lathrop et al. Can-openerJ. Murchie	-El∈ Em
Car-brake	En En
Car-coupling	S
Car-doorA. Olson	En t
Car-door	En t
Car-fenderJ. P. Geraghty et al.	Εn
Car-roof	En
Car-stake pocketL. M. Otto, Jr. Carbon-holder for electric fnrnaces	Ev
P. L. T. Heronit Carbureter. C. P. Simmons Carbureter. E. Sprung et al.	Ex e
Carbureter. E. Sprung et al.	Ex
Card-holder	Ex Ex
Casting-machineV. II. Mills Ceiling and floor plateA. C. Gaynor	Ex
Centrifugal bowls, Means for balancing J. Pohl	Ey
Charging-toolC. W. Thomas Charging-toolC. W. Thomas et al. Check row wire C. Ver North	Ey Ey
Check-row wire	Fe Fe
Cigarette-tipping machine	Fe
Circuit trouble-indicatorC. L. Healy	Fe Fe
Chuck, Drill	Fe
Clamping mechanismB. M. W. Hansom	Fe Fe
Clay or the like, Machine for cleaning and	Fei
Clock Alarm- E E Stockton et al	Fe: Fil
Clock, IndicatingW. W. Rhame et al.	Fil Fil
Clothes-line prop W. E. Knoder	Fil Fii
Clothes-line propW. E. Kuoder Clutch. B. M. W. Hanson Clutch, Friction H. F. Evers Clutch, Friction-eoil. F. R. Allen	Fir
Cinten meensnism G Pearson	Fin f
Coating objects with subdivided material, Apparatus forG. L. Cragg Cock box, hydrant, and street-washer, Stop-	Fir Fir
Cock box, hydrant, and street-washer, Stop-	Fii Fii
Cock-operating mechanism, Cylinder-drain-	
Coffee grinder and eleaner, Combined	Fis Fis
Cock-operating mechanism, Cylinder-drain- Cock-operating mechanism, Cylinder-drain- C. L. Heisler Coffee grinder and cleaner, Combined F. Wear Coin-assorter (2 pats.). D. Drawbaugh Coke-oven. G. Schwab Combing machine, Pelt- Compass Electromagnetic	Fis
Combing machine Polt M. T. Poch	Fli
Compass, Electromagnetic	Fli
Compass, ElectromagneticL. D. J. A. Dunoyer Compound reel (2 pats.)E. E. Wolf et al.	Fh

Concentrating-tables, Operating mechanism for C. W. Arbuthnot Concentrator and amalgamator W. M. Nesbit et al. Concerte structures, Reinforcement for
Concentrator and amalgamator
Cooking, drying and conveying machine, CombinedE. L. Thurber et al.
Cooking-utensil support and food-support, Combined
Cotton-chopper
Cranes, Trnek-mounting for traveling H. W. Israel Crate or lox. Folding C. H. Stail
Crutch. P. R. Wilde Cultivator. A. A. Kellogg
Culvert, Corrugated
Damper-regulatorE. J. Deegan Dams, Movable crest forG. F. Stickney Dantal articulator. F. Swoot
Condenser
Destrick
Display-rack, FoldingE. E. Schmitt Pisplay-standC. R. Walgreen et al.
air-tubes and electric conductors to sub- marine
Diving apparatus, Snbmarine
marine
Draft attachment
spindle
Driving mechanismP. J. Mneller Drying apparatus for alimentary pastes
air-tubes and electric conductors to submarine. C. E. Macdnffee Diving apparatus, Submarine. C. E. Macdnffee Diving apparatus, Valve for use with submarine. C. E. Macdnffee Diving apparatus, Valve for use with submarine. C. E. Macdnffee Door-holding means. A. L. Bell et al. Door, Sliding. W. H. Danner Draft attachment. H. J. Heider Drills, Lubricating mechanism for multiple- spindle. B. M. W. Hanson Drilling-machine. Driving mechanism. H. E. Perrault Driving mechanism. P. J. Mueller Drying apparatus for alimentary pastes. G. Falchi Dust, dirt. leaves, and other impurities from wool, hair, cotton, and other fibrous materials, Apparatus for separating. J. Hampson
materials, Apparatns for separating J. Hampson Dveing R. Ott
Dyestuff, Azo (2 pats.)O. Gunther et al. Egg-beaterE. D. Read
Dyeing. R. Ott Dyestuff, Azo (2 pats.) O. Gunther et al. Egg-beater E. D. Read Elastic coupling E. Schmalzried Electric apparatus, Vapor P. C. Hewitt Electric-circuit breaker W. Walz Electric-light fixture J. J. Raithel Electric meter G. A. Scheeffer
Electric-light fixture
Electrical pull-sockets, Chain-guide for
Electric ineter. G. A. Scheeffer Electrical distribution system
Electrometallurgical furnaceF. Lonvrier Embroidering-machine shuttle.M. Schoenfeld Engine ammuciator, ExplosiveR. C. Dewey
Engine reversing-gear and speed-changer, Steam. T. T. Waggoner
Engine annunctator, Explosive. R. C. Dewey Engine reversing-gear and speed-changer, Steam
Engines, Fnel-injector for internal-combustion
Engines, Fnel-pump for explosion
Evaporating-pan J. W. B. Harry Exerciser-cords, Conpling for the ends of elastic or other H. J. Wareham
Exhibiting and advertising device H. W. Pearson Explosive
Explosive-engine
Eyeglass and spectacle rim. J. C. Wells Eyeglass-mounting. G. A. Squier
Eyeglass-montting F. A. Stevens Feed-mill P. Van Huffel Feed-trough, Poultry F. R. Parks
Feedwater heater, LocomotiveM. C. Ross Feed-water regulatorH. E. Heisley Feeder PoultryA. H. Baker
Feet, Adjustable elastic support for concave and flatJ. May
Fence machine, Wire- D. C. Smith Fence-post D. Smith
Fertilizer-distributerW. G. Gallaher Fiber-cleaning apparatusJ. Hampson Filament-mounting machine, W. R. Burrows
File and binder, BillA. W. Ullom FilterA. Uhde
Exposives, Making material for
Firearm. R. Frommer Firearm, Antomatie R. Frommer
Firearm. R. Frommer Firearm, Antomatie. R. Frommer Firearm, Automatie. L. Sehmeisser Fireproof-bnilding floor construction. E. V. Johnson
Fish-hook. J. J. Mneller Fish-plate. D. Eseher Fishing-float and flashlight, Combined.
Fluid-generating apparatns, Motive N. B. Wales Flushing apparatusJ. E. Furlong Flushing-tanks, Operating mechanism for
water-closet

Fly-net holderJ. D. Krenz Flytrap for screensW. L. Webb
Flying-machine J. Phillips Flying-machine J. A. Blondin Food, Cattle B. H. Bertels
Fruit stone and core extractor.G. B. Larrick FumigatorL. S. Livingstone
FurnaceC. W. Thomas FurrowerE. M. Cox et al.
Flytrap for screens. W. L. Webb Flying-machine J. Phillips Flying-machine J. A. Blondin Flying-machine J. A. Blondin Flying-machine J. A. Blondin Flying-machine B. H. Bertels Fruit stone and core extractor G. B. Larrick Fumigator L. S. Livingstone Funnel H. M. Schuarr Furnace C. W. Thomas Furrower E. M. Cox et al. Game apparatus, Geographical M. L. Tucker Garment-hauger F. P. Traversi Gas and air mixer F. C. Merrege Gas-burners, Thermostatic cut-off device for J. W. Peplinski Gas generator, Acetylene E. G. Morrison Gas generator, Acetylene A. S. Phelps, Jr. Gas generator, Acetylene A. S. Phelps, Jr. Gas generator, Acetylene A. L. Kirkpatrick Gases in upright retorts, Producing C. Bolz Gearing, Yieldable R. H. Voegtle
Gas-burners, Thermostatic cut-off device forJ. W. Peplinski
Gas generator, AcetyleneE. G. Morrison Gas generator, AcetyleneE. W. Showalter Gas generator, AcetyleneA. S. Phelps, Jr.
Gas generator, AcetyleneA. L. Kirkpatrick Gases in upright retorts, ProducingC. Bolz Gearing, YieldableR. II. Voegtle
Gears, Mechanism for controlling the con-
Generator-driver. A. C. Lindgren Generator-driver. H. C. Clay Gluc-heater. C. M. Zimmerman Gopher-trap. J. W. Rigney Governor. Gas-engine. P. Okey Grain-polisher. A. B. Couch Grain-sprouter. R. Hohnbach Grate, Fireplace. R. C. Andrews Gravel loader and excavator. F. Hollowell Grease-cup. O. N. Terry
Gopher-trap. J. W. Rigney Governor, Gas-engine. P. Okey
Grain-sprouter R. Hohubach Grate, Fireplace- R. C. Andrews
Gravet loader and excavator. F. Hollowell Grease-cupO. N. Terry Grinding-machineR. F. Thompson
Grooving-knife. B. L. Abbott Gun. K. Voller Hacksaw Power- H. L. Leland
Hammer, PowerG. D. Roberts Hammock and cot, Combined
Hand-strap. J. S. Doyle Harrow, Disk. H. P. Corne
Harvesting machine, OnionF. Olson Hat-fastenerE. O. Schley Hat-frame-making machine Wires
Hat-pin J. A. Schwartz Hat-pin M. L. Bagley
Hat-pin-point protector
Hay-rack J. Hayden Hay-unloader H. T. Holten Head-gate F. P. Snow
Heater. P. Frazier et al. Heating devices, Thermostatic control of
Grate, Fireplace
Hinge construction for doors, R. G. Winter
Hinge, Invisible. E. R. Hanson Holding means. C. M. Turton Honey-uncapping machine. L. R. Ferguson Hoop-stapling machine. M. E. Lobley Horse-detacher. S. Smith Horseshoe attachment. J. A. Dann Horseshoe, Auxiliary. P. W. Zeller Hose attachment. H. H. Miller Hose clamp and support. A. R. McCormick Hose-coupling. E. S. Hall Hose-pipe J. W. Shaw Hose-supporter. J. B. Moses Hot-water heater. A. Kamenetzký Hover for poultry. G. M. Curtis
Hoop-stapling machine M. E. Lobley Horse-detacher S. Smith
Horseshoe Attachment J. A. Pann Horseshoe, Auxiliary P. W. Zeller Hose attachment II, H. Miller
Hose clamp and support. A. R. McCormick Hose-coupling. E. S. Hall Hose-pipe J. W. Shaw
Hose-supporter. J. B. Moses Hot-water heater. A Kamenetzký Hover for poultry. G. M. Chris
Hot-water heater. A Kamenetzký Hover for poultry. G. M. Curtis Hydrocarbon-burners, Safety feed device for. W. M. Hibbitt Hydrocarben-motor. A. B. Fowler Ice and generating power, Making J. P. Pool Incandescent mantles, Apparatus for treating. J. T. Lister Incubator regulating mechanism. I. L. White Indicating devices, Maximum-hand for B. Volkmar
Ice and generating power, Making J. P. Pool
Incandescent mantles, Apparatus for treatingJ. T. Lister Incubator regulating mechanism
Indicating devices, Maximum-hand for
Ink or coloring-matter from paper, Removing
Insole-making machineW. Gordon Insulator-supportW. L. Chamberlain Internal-combustion engineF. J. Moser
B. Volkmar Ink or coloring-matter from paper. Re- moving. W. B. Meixell Insole-making machine. W. Gordon Insulator-support. W. L. Chamberlain Internal-combustion engine. F. J. Moser Iron, Device for perforating figured. H. Koepplinger Jarring-machine blacking-box. E. C. Wiley Journal-box lifter for cars. S. A. Pedlar
Journal-box lifter for carsS. A. Pedlar Journal-box lubricant device (Reissue)
Johrnal-box, Wear-compensating. B. M. W. Hanson
Jarring-machine blacking-box . E. C. Wiley Journal-box lifter for cars S. A. Pedlar Journal-box lubricant device (Reissue)
Knife-switchO. H. Danzer Ladder, ExtensionG. W. Mohrstadt
Lamp, Arc. S. P. Wilbur Lamp-burner J. E. Robertson Lamp-chimney holder O. I. Hines
Lamp, Electric-arc. W. R. Ridings Lamp, Gas G. Wedderburn
Lantern, TubularA. R. Pritchard Lead. Mannfacture of redG. V. Bartou
Lead. Mannfacture of red G. V. Bartou Lead oxid and white lead, Mannfacture of
Life-preserverC. R. Cotter Lightuing-arrester. E. E. F. Creighton Limb Artificial W. G. Kelly
Lime-hydrating machine J. Currie Linetype-machine matrix H. Degener
Linetype-machine matrixH. Degener Liquid-fuel burnerL. O. Pearson Liquid-fuel burnerN. T. Hensen Liquid-separator, CentrifugalB. R. Wright Liquid-separator.
of (2 pats.). A. Priestman Lock. A. Wesolowski Lock and fastening. J. S. Campbell Logging device. W. H. Porter Loom shedding mochanism. E. H. Prop
Looms, Electromechanical stopping mechan-
Looms, Filling detector or feeler for weft- replenishing. E. H. Ryon Looms, Shuttle and shuttle-block for nar- row-ware. W. Wattle
row-wareW. Wattle

_			
	Magnet, Alternating-current	Scaffold, Adjustable window. S. W. Wright	
	Magnetic materials, Apparatus for handling	Seal, Car	Vending-machineG. U. Bake Vending-machineL. 11 1 / k
	dling. J. F. Schnabel Mail-bag-exchanging apparatns. C. W. Bell	Seal-press	Vending-machine coin-controlled oper time mechanismF. W. Watermen
	Mail-carrying deviceJ. F. Erickson et al. Mail receiving and discharging device	Seed-cleaning machine, CottonJ. B. Cornwall	mechanism F. W. Waterman Vessel, Submarine M. A. Liubeu View-finder W. F. Folme
	Malt. Treating	Selector mechanism. A. F. Dixon Sewing-machine. A. Rontke	Vine-cutter
	Mandolin	Shades on rollers, Machine for fastening and winding B. Girard	Voting-machine
	Mast, Extensible and retractable telescop- ing	Shafts in water-impregnated ground, Sinking deepF. Billings	Warm-air register. J. J. and S. P. Burges- Washing-machine. H. L. Simmon
	Mattress, Metallic. C. J. Witzel Merry-go-ronnd. M. W. Palmer Metal-bender. V. J. Mayo	Shock-absorberL. A. Peckham Shock-absorbing deviceL. A. Peckham	Waste-burner. C. A. Raggie Water-carrier. J. C. Truloy
	Metal-bender	Shoe	Water-heater, Quick-acting. J. B. Mowry Water-purifier, Antomatic. G. F. Day
	Milk cooler and aeratorW. V. Rooker Mining sulfurH. Frasch	Shrub and plant trimming machineG. F. Mitchell	Water-wheel. D. S. Hibbare Weeding-machine. H. B. Etheridge
	Molding-machine	Sieving-unachineJ. B. Loison Silencer and bayonet, Combined.B. W. King	Well control, OilJ. E. Suits et al
	Motion-transmitting mechanismG. S. White	Sink structureT. F. Payne Skirt-markerJ. Zelman	Well-drilling apparatus. S. S. O'Connor Well-drills, Rope-eye for. J. J. Herndor
		Sled. J. O. Nelson Smoke-bell support. F. H. Watson	Welts, Machine for beating out. L. Goddr Wheel. N. H. Rankin
	Motor-control systemG. B. Schley Motor controller, ElectricW. A. Paris	Soldering-machine. C. W. Graham Sound transmission. E. Gray	WheelJ. L. Spoonts et al. Wheel-rim. DetachableA. D. Foucart
	MouthpieceL. Steinberger Mnsic-leaf turnerM. Detweiler	Spanner, ShiftingP. P. Stromberg Spectacle-temples, Cover forF. Neudorff	Wind-unotor. G. E. McClendon Wind-wheel G. E. McClendon
	Necktie-fastenerJ. C. Beekman Needle-holder, Automatic magazine	Spindles, End-thrust adjustment for machine H. J. Hjorth	Windmill J. Shirley Winding-frames, Device for guiding and
	Needle, SplicingJ. D. Martin	Spinning-frame doffing mechanism	stripping thread on \(\lambda\) Lentset \(\mathbb{W}\) indow \(\lambda\) \(\lambda\) Kranse
	Nut-burring machine. W. L. Clouse Nut-lock. J. Rhoads	Spinning-mule. W. D. Rundlett et al. Spring-wheel. W. Hayden	Window-cleanerR. H. Newman et al. Woodworking-machine, Combination
	Nut-lock F. E. Sackrider Nut-lock C. M. Fawcett et al.	Stacker, Pneumatic F. L. Sattley Stair-covering J. D. Perrott	Woodworking machinery (2 pats.)
	Oil and compound thereof (3 pats.)	Stairease	Wrapping machine, ParcelL. Ljunglot
	Oil-can. W. N. Blakeman, Jr. J. T. Smallwood	Stamping-machine attachment. G. E. Earn Stanchion. A. Shaw	Wrecking apparatusJ. J. Cousins WrenchL. E. Boatwright
	Oiler, Track	Steam-boilerJ. H. Lester et al. Steam-generators, Compound for preventing	Wrench
	Oysters, Extracting pearls fromJ. I. Solomon	the formation of scale, corrosion and pitting inO. II. Schroeder	Yoke, Cow
	Packaging, Process of	Steam-trap, ReturnJ. W. Lytton Stirring or agitating deviceC. Doering, Jr.	
	Packing, Metallic J. Bowie	Stitching mechanism, Presser-foot for sole- 	Issued April 18, 1911.
	Paper K. E. Rogers Paper, &c., Apparatus for treating old	Stocking-formE. A. Johnson Stoker, MechanicalC. Harter Stone-dressing machineE. Collius	MECHANICAL PATENTS.
	Paper-feeding machineW. S. Amidon Paper-making machineJ. A. White	Stool, Milking	Abrading-stones, Dressing-tool for
	Pasteurizing apparatusF. Gettelman Pen, FountainC. Petersen	Strainer for sink-outlets. II. Auderson Strainer for sink-outlets. II. A. Peters	Adding-machine
	Pen-handle and attachment therefor for erasing and other purposes. E. J. Kehoe	Strainer, Tea and coffeeW. T. Parkin Street-sweeperA. S. Machen	Adjustable coupling. J. C. Harris
	Pen-nib	Structure, ReinforcedD. B. Luten	Adjustable stand and burnerl. Yassenoff Adjustable tableJ. G. Schreiber
	Photographic-printing apparatus	Suction-boxG. II. Sagar Suction-treadJ. R. Sanford Sugar CrystallizingP. Kestner	Advertising deviceJ. Gruber Advertising-machineV. L. Helm
	Photographic-printing apparatus	Suit. Combination athleticH. C. Routery	Aeroplane
	Photographic-printing machine	Surgical instrument for cutting bandagesO. Hasselmann	AeroplaneC. P. Savage et al. AeroplaneJ. Skorupa
	Piano, Autopneumatic. A. J. Hobart	Surgical needle	Air-cooling machineR. II. and W. A. Easterling Air-coupling, AutomaticP. Haley
	Pill-making machineJ. C. Morgan Pipe coupling, TrainH. S. Harcourt	ment for C. M. Pidgeon Sweep-rake C. Pearson	AirshipJ. I. C. Clarke
	Pipe stem TobaccoL. Riggs Pipes from metal strips, Apparatus for	Swing, AutomaticL. T. Turmelle SwitchV. D. Shuster	Alcohols, KetoneG. Merling et al. Alkaloids, Manufacture of hydrocinchona
	manufacturingE. J. Post Planers, Beading-machine for wood	Switch C. Huffman Tag. Baggage A. W. Schaefer	Alligator-wrenchF. O. Jaques. Jr.
	Plant-protector	Talking-machines sound-boxA. Fischer Talking-machines. Filing inclosure or cas-	Aloin ester
	PlanterB. F. Luke et al. Planting machines, Feed-regulating device	ing for the records of E. S. Oliver Tauk-switch, Electric H. A. Prindle	Amino-aryl-acidyl-amino-anthraquinones and
	for seed	Tanning leatherJ. A. Haurick Telegraph apparatus, Fire-alarm	their acidyl derivatives, Manufacture ofF. Henle
	Plow fertilizer attachment, Single-horse	Telephone-receiver, MultipleW. B. Relth	Ammonia, Producing
	PlowshareJ. F. C. Hodges	Telephone systemD. L. Temple et al. Telephone systems, Couversation-meter for	Angles, Instrument for observingE. Koscinski
	Polishing curved surfaces, Device for J. R. Richardson	Thermostat, ElectricalA. Goldstein	Animal-trap. C. L. Kaufman Annunciator. C. J. Henschel
	Potato-diggerG. Tefo Preserving bivalvesE. F. Hulbert	Thread-beams, Tension for rotary	AquaplaneS. M. Howard Arch-supportJ. Svenson
	Press for plastic material. W. B. Updegraff Printer's plate-hookM. Hoge et al.	Tie device for wooden structures J. W. Slayton	Automobile non-skid deviceO. Rash Automobile-radiator cooling-tube
	Printing-pressE. J. Casey Printing-pressR. Miehle	Tie with compound light-pane, Roofing	Automobile starting deviceC. B. Wilcox
	Printing-press air-cushionR. Miehle PropellerF. C. Gordon	Tiling for roofsD. W. Buchanan	Awning-support
	Protractor	Time-switch, AutomaticR. W. Lawson et al.	Baby-walker and chair, Combined
	Pulp, Machine for cutting chips for wood-	Tire, VehicleJ. G. Funk Tire, VehicleA. P. Burrus	Bag-holder
	Pump. T. E. Wintz Pump, Governed. N. McCarty	Tire, Vehicle-wheelA. T. Scaramuzzi Tool-holderP. B. Christensen	Balance-sheet and pad-holder, Combined A. O. Heil
	Pump, LiftT. Babin PumphA. Coon	Tooth, Artificial (4 pats.)	Balers, Self-weighing device for hay J. M. Quindry
	Punch-press	Toy, Flying. O. Schulze Toy hand-car. H. T. Kingsbury	Baling-press L. H. Couner Baling-press P. J. Kelly
	Radiator for cooling fluids	Toy spinner W. H. Phenice Toy, Wheeled H. T. Kingsbury	Barrette
	Rail-joint	Traction-engineR. Parker et al. Transmission mechanismS. C. Carter	Battery-holderG. N. Waterbury, Jr. Battery-plate separator, Storage
	Rail-joint J. H. Morrow Rail-joint E. Wadsack	Tree-protector. R. H. Bremer Trolley-harp. I. H. Black	Bearing, Ball- F. L. Sessions R. Cook
	Railway fish-plateJ. G. Shudera Railway, PleasureA. Aitken	Trolley, Overhead H. D. Murdock Trolley-pole C. E. Bradford	Bearing, Ball- (2 pats.)H. Barthel Bed attachmentA. L. Lightner
	Railway safety deviceH. F. Dyer Railway signal systemA. L. Ruthven	Tubing. Method of and means for making	Red-bottom, Woven-wireF. A. Palmer Bed-davenportA. C. Klopping Bed, Invalid'sM. J. Reiff
	Railway-switchW. J. Sanders Railway-tieJ. Burnam	Turbine . E. Fisher, Jr. Twist-drill . E. B. Mather	Bed-rest
	Railway-tieM. J. Muuson et al. Railway-track safety applianceJ. Morton	Twister. A. E. Rhoades Type-bar-operating mechanism. E. B. Cram	Red-spring fabricM. R. Mangan et al. Redstead extensionO. R. Cassell
	RazorS. W. Charles Razor, SafetyD. Hepp Razor, SafetyJ. Molkenthin, Jr.	Type-chaseS. A. Neidich Type-setting appparatusH. Drewell Type-writerW. G. Babcock	Relt, Apparel
]	Reaper and thresher, TravelingA. Hines	Type-writing machine (2 pats.).H. II. Steele	Rench-clampO. Berg Ressemer converter, Lateral-blast A. Baillot
	Refrigerator-can	Type-writing-machine eraser attachment L. A. Carter et al.	Billiard-cue. A. L. Black Blackboard-frame. W. H. Scott, Sr.
]	Reproducing apparatus, Device for controll-	Typographical gageG. H. Riehl et al. Umbrella fabric-clampC. Raber et al.	Blacking-applying machine for boots and shoesJ. C. C. Scheer
	ing the operation of two.F. E. Thormeyer Riveting-machine	Upholstered bottomF. Roever Valve-controller mechanism.	Blotter-pad and calendar, Combined desk H. E. Richardson
	Rolling tapered tubes, Apparatus for	Valve for gas-engines, Exhaust-	BobbinS. W. Wardwell Boilers, Antisiphonic device for G. H. Ayer
]	Rotary engine (2 pats.)E. Fisher, Jr. Rubber boot or shoeA. D. Warner	Valve for pipes which convey melted sul-	Book-locking deviceG. Larsen Book-stackW. T. Callaghan
5	Rule-holderA. C. G. Wahl Sad-ironH. W. Johnston et al.	fur	Book-stand. S. H. Nuckolls Boot and shoe. W. L. Dash
5	Saddle, Running-boardW. P. Murphy Salt, TreatingE. R. Royston T. R. Coldwall	Valve, SwitchH. Moeller et al. Vanlt and receptacle, burialJ. T. Bond	Bottles, Device for preventing the refilling ofB. F. Hand et al.
	Sash-cord guideJ. R. Caldwell Sash lock and liftE. Brombacher	Vehicle driving and steering device E. A. Gotterba	Box-skid

Scalloid, Adjustable window, S. W. Wrigh Scal,, G. S. Turne Scal, Car. A. L. Stanfor Scal-press R. A. Stewn Scaling machine, Envelop E. J. Brasseu Seed-cleaning machine, Cotton	1
Selector mechanism. J. B. Cornwa Sewing-machine. A. F. Dixo Sewing-machine. A. Rontk Shades on rollers, Machine for fastenin and winding. L. B. Girar Shafts in water-impregnated ground, Sink	11150
Seal. G. S. Turne Seal. Car- A. L. Stanfor Seal-press. R. A. Stewn Sealing machine, Envelop- E. J. Brasseu Seed-cleaning machine, Cotton Selector mechanism A. F. Dixo Sewing-machine A. Rontk Shades on rollers, Machine for fastenin and winding L. B. Girar Shafts in water-impregnated ground, Sink ing deep F. Billing Shock-absorber L. A. Peckhai Shoek-upper marking machine, F. A. Rumne Shoe-upper marking machine, F. A. Rumne Shrub and plant trimming machine.	3 11113
Shoc-upper marking machine, F. A. Rumne Shrub and plant trimining machine. G. F. Mitchel Sieving-machine. J. B. Loiso Silencer and bayonet, Combined B. W. Kin Sink structure. J. Zelma. Skirt-marker. J. Zelma. Sled. J. O. Nelson Smoke-bell support. F. H. Watson Soldering-machine. Sound transmission. E. Gras.	li n n n n
Smoke-bell support. F. H. Watson Soldering-machine. C. W. Graham Sound transmission. E. Gra- Spanner, Shifting. P. P. Stromber Spectacle-temples, Cover for F. Neudorf Spindles, End-thrust adjustment for ma	II IV
chine	11 . 61.
Soldering-machine. C. W. Grahan Sound transmission. E. Gra Spanner, Shifting. P. P. Stromber Spectacle-temples, Cover for. F. Neudorf Spindles, End-thrust adjustment for ma chine. H. J. Hjortl Spinning-frame doffing mechanism. N. R. Newsholm Spinning-mule. W. D. Rundlett et al Spring-wheel. W. D. Rundlett et al Spring-wheel. F. L. Sattle Stair-covering. J. D. Perrot Stair-covering. J. D. Perrot Staircasc. F. A. Winslow Stamping-machine attachment. G. E. Ear Stanchion. A. Shav Steam-boiler. J. H. Lester et al Steam-generators, Compound for preventing the formation of scale, corrosion and pit	V n V l or - w
the formation of scale, corrosion and pitting in	n
Stoker, Adecianical. C. Harte Stone-dressing machine E. Colliu Stool, Milking H. R. Brown Stove, Heating II. B. Hemphil Strainer II. Auderson Strainer for sink-outlets H. A. Peter.	Sala
Stitching mechanism, Presser-foot for sole Stocking-form. E. A. Johnson Stoker, Mechanical. C. Harte Stone-dressing machine. E. Collius Stool, Milking H. R. Brown Stove, Heating. H. B. Hemphil Strainer. H. Auderson Strainer for sink-outlets. H. A. Peter Strainer, Tea and coffee. W. T. Parkin Street-sweeper. A. S. Macher Structure, Reinforced. D. B. Luter Suctiou-hox. G. H. Saga. Suction-tread. J. R. Sanford Suction-tread. J. R. Sanford Suction-tread. J. R. Sanford Sugar Crystallizing. P. Kestnee Suit. Combination athletic. H. C. Routery Surgical instrument for cutting bandages. O. Hasselmann Surgical needle. C. G. Davis	111111
Surgical instrument for cutting bandages. O. Hasselmant Surgical needle. Surveying instruments or transits, Attach ment for Sweep-rake. C. Pearson	1 5
Swing, Automatic Tarmelle Switch	90100
Surveying instruments or transits, Attach ment for	1
Thermostat, ElectricalA. Goldstein Thread-beams, Tension for rotary W. M. Conrad et al.	
Tie-plate	
Tie device for wooden structures. J. W. Slayton Tie-plate	
Foy pand-car. H. T. Kingsbury Foy spinner. W. H. Phenice Foy, Wheeled. H. T. Kingsbury Fraction-engine. R. Parker et al. France ission mechanism S. C. Cartor	
Frolley-harp. I. H. Black Frolley, Overhead H. D. Murdock Frolley-pole C. E. Bradford	
Turbine	
Type-chase	
Ipholstered bottomF. Roever 'alve-controller mechanism H. G. Geissinger 'alve for gas-engines, Exhaust G. B. Petsche 'alve for pipes which convey melted sulfurH. Frasch 'alve or gateF. P. Snow 'alve, SwitchH. Moeller et al. 'anlt and receptacle, burialJ. T. Bond	
Tur	

Ychicle-wheel
Vending-machineG. U. Baker
Vanding un chine
Vending-machineL. II 1 ko
Vending-machine coin-controlled oper ting
mechanism
View-finder
Vine-cutter
Vine-cutter. C. J. Bartes Vise (2 pats.)
Voting-machine. W. Lengrill Wagon-brake, Automatic A. N. Hanna
Wagon-brake, Automatic A N II man
Warm-air register. J. J. and S. P. Burgess
Washing-reaching II I simmer
Washing-machine
Waste-burner
Water-carrier
Water-heater, Quick-actingJ. B. Mowry Water-purifier, AntomaticG. F. Day
Water-purifier, AntomaticG. F. Day
Water-wheel
Weeding-machine
Well control, OilJ. E. Suits et al.
Well-drilling apparatusS. S. O'Connor
Well-driffs, Robe-eye for I Herndon
Welts, Machine for beating out . L. Goddu
Wheel
WheelJ. L. Spoonts et al.
Wheel wire Detached by the Description
Wheel-rim, DetachableA. D. Foucart
Wind-motor. G. E. McClendon Wind-wheel. G. E. McClendon
Wind-wheel
Windmill
Winding-frames, Device for guiding and
Winding-frames, Device for guiding and stripping thread on
Window Kranso
Window. A. Kranse Window-cleanerR. H. Newman et al.
Woodworking-machine, Combination
L. F. Parks
Woodworking machinery (2 pats.)
I F Porle
Wrapping machine, ParcelL. Ljunglof
Who ching and and the Tarcel Lighting lot
Wrecking apparatusJ. J. Cousins
WrenchL. E. Boatwright
Wrench
Yarn carrier, TuftE. H. Ryon
Yoke, Cow
Zither-keyboardF. Menzenhaner

Issued April 18, 1911.

MECHANICAL PATENTS.

Abrading-stones, Dressing-tool for
Abrading-stoues, Dressing-tool for
Adjustable coupling J. C. Harris
Adjustable stand and burnerl. Yassenoff
Advertising deviceJ. Gruber
Aeroplane P. S. Woods
AeroplaneJ. Skorupa
Air-cooling machine
Air-coupling, AutomaticP. Haley AirshipJ. I. C. Clarke
Alcohols, KetoueG. Mcrling et al. Alkaloids, Manufacture of hydrocinchona
Alligator-wrench. F. O. Jaques, Jr. Aloin ester. W. Hiemenz et al. Aluminous compositions, Preparation of
Aluminous compositions, Preparation of
Amino-avyl-acidyl-amino authyraminones, and
their acidyl derivatives, Manufacture of F. Henle Ammonia, Producing
Ammonia, Producing
Angles, Instrument for observing
Animal-trap. C. L. Kaufman
AquaplaneS. M. Howard
Automobile non-skid device
Automobile-radiator cooling-tube
Awning-support
Anmonium salts, ProducingC. Bosch Angles, Instrument for observingE. Koscinski Animal-trapC. L. Kaufman AnnunciatorC. J. Henschel AquaplaneS. M. Howard Arch-supportJ. Svenson Automobile non-skid deviceO. Rash Automobile-radiator cooling-tubeE. and H. Behringer Automobile starting deviceC. B. Wilcox Awning-supportP. P. Hopp Axle-journal lubricator, CarJ. C. Nichol Baby-walker and chair, CombinedH. A. Hayden.
Bag-holder
Balance-sheet and pad-holder, Combined
Baby-walker and chair, Combined
Baling-press. L. H. Conner
Barrette
Battery-holderG. N. Waterbury, Jr.
Battery-plate separator, Storage. F. L. Sessions R. Cook Bearing, Ball- Bearing, Beari
Bearing, Ball- (2 pats.) H. Barthel
Bed attachmentA. L. Lightner Bed-bottom. Woven-wireF. A. Palmer
Bed-davenport. A. C. Klopping Bed, Invalid's M. J. Reiff
Bed-rest
Bedstead extensionO. R. Cassell Belt, ApparelW. A. Simmons
Belt, Conveyer
Bessemer converter, Lateral-blast.A. Baillot Billiard-cue
Blackboard-frameW. H. Scott, Sr. Blacking-applying machine for boots and
shoesJ. C. C. Scheer Blotter-pad and calendar. Combined desk
Belt, Conveyer- X S. Dodge Bench-clamp O. Berg Bessemer converter, Lateral-blast A. Baillot Billiard-cuc A. L. Black Blackboard-frame W. H. Scott, Sr. Blacking-applying machine for boots and shoes. J. C. C. Scheer Blotter-pad and calendar. Combined desk. H. E. Richardson Bobbin S. W. Wardwell Boilers, Antisiphonic device for G. H. Ayer Book-locking device G. Larsen Book-stack W. T. Callaghan Book-stand S. H. Nuckolls Boot and shoe W. L. Dash Bottles, Device for preventing the refilling of Boy-forming mechanism G. W. Maxwell
Boilers, Antisiphonic device forG. H. Ayer Book-locking deviceG. Larsen
Book-stackW. T. Callaghan Book-standS. H. Nuckolls
Boot and shoe
ofB. F. Hand et al.

Brake-beamB. Haskel Brake-hanger monnting.C. H. Williams, Jr	l I
Broom-making machine. H. E. Smith et all Bucket. G. M. Bennet Bucket. J. L. Butle Buckle. W. R. Faris Buckle. G. W. Hacket Buckle. W. S. Grahan Building-block. P. D. Diamone Building-block Artificial-stone J. Buble	. <u>E</u>
BucketJ. L. Butle:	t E r E
Buckle	s E
Buckle	1 1 E
Puilding blooks Facing	1 A.
Bushing for pulleys L. Whitcoml Button . D. C. Lockhar Button W. M. Noble Cable-hook J. P. Peterson Cake-making machine D. Burkhard Calculating device, Roof-rafter D. Robertson et al.	e L
Button	b E
Cable-hookJ. P. Peterson	e F u
Cake-making machineD. Burkhard Calculating device, Roof-rafter	t F
D. Robertson et al Calculator for tariffs. W. L. and J. A. Seddor Camera, Photographic. P. Kaemmere	. F
Camera Photographic P Kaemmerc	. E
Camphor, Manufacture of J. Schmitz et al. Can-testing machine	. I
Candy-depositing machineV. C. Fulle	r I
Car-bolsterJ. Pearson	g F
Car-bolster. J. Pearson Car-brake. J. McCloskey Car. Dump- W. A. Caswel Car-stake, Releasable. J. G. Schroede Cav-step, Registering. G. W. Clement: Car-underframe. G. I. King	
Car-stake, ReleasableJ. G. Schroede Cav-step, RegisteringG. W. Clement:	1 8 E
Car-underframe	r E
Car-unloading attachmentF. Koble Car-ventilating apparatusT. H. Garland Car wheel and axle, Cambined.G. P. Eusti	i s F
Cars, Antomatic coupling for signal, air and steam betweenF. R. Sheldon	
Cars, Draft construction for frame rail way C. H. Seabrook et al	n E - E
Carbureter. C. H. Seabrook et al Carbureter. L. L. Cutle Carbureter (4 pats.) C. M. Kemj	r l: P l:
Carbureter (4 pats.)C. M. Kemj CarbureterS. Olser	p 1: 1 1:
CarrierF. A. Schmich et al CarrierH. McCabe	. 1 e 1
Carbureter (4 pais.). C. M. Kenn Carbureter . S. Olse Carpet-fastener . F. A. Schmich et al Carrier . H. McCab Catalytic synthesis of methane F. Bedford et al Catch or door-check, Combined safety J. G. Crosskii Chain Multiple drive . F. L. Mors	. l
Catch or door-check, Combined safety	i i
Chain, Multiple driveF. L. Morse	e F
Chain, Multiple driveF. L. Mors Chair attachment, Barber'sE. F. Levesque Chuck, DrillL. S. Whitehead Chucks, Certain kind of spiral, G. B. Taylo	e 1. 1 1.
Chucks, Certain kind of spiral, G. B. Taylo ChurnJ. R. Gild:	t F
Churn J. R. Gilde Churn J. Jeffri Cigarette and cigar case C. W. Bishop	5 F
Cigarette making and tipping machine F. J. Ludington	11 F
Cistern-cleaning abbaratus, Automatic	
Clamping device, Receptacle	.].
Clasp. T. B. Grenninge Clothes-holding device. C. E. Jackson	s I r I
Clutch, Fluid-operatedE. Biver Code, Cable or telegraphM. E. Sweene:	t I
Clutch, Fluid-operated E. Biver Code, Cable or telegraph. M. E. Sweener Collar-support D. Marinsk Composing-machine, Multiplex	· F
Composing-machine, Mintplex J. S. Bancroft et al Composing-machine, Pattern or record-strip R. C. Elliot Compound engine	. 1
Compound engine H. Junker	t F
Concrete-block-molding device.C. A. Perfec	t I
Concrete Constitution, Remarketed	e l
Concrete-mixer londer. J. Du Shan- Confections, Machine for decorating.	e I
Confections, Machine for decorating. W. F. Walke Contact-disk. E. L. Mose Convertible chair. J. L. McKaj Conveying apparatus. A. Temple Cooking-vessel support. E. P. Brewe Cooling-tower. O. H. Muelle Copper and its alloys, Improving the coudinctivity and tensile streugth of R. Frank Corkscrew, Pocket-C. W. Windhovel et al Corn-grader C. Hunnicut	$egin{array}{ccc} \mathbf{r} & \mathbf{F} \\ \mathbf{s} & \mathbf{F} \end{array}$
Convertible chairJ. L. McKa; Conveying apparatusA. Temple	y s l
Cooking-vessel supportE. P. Brewe Cooling-towerO. H. Muelle	1. I.
Copper and its alloys, Improving the cou	ı- . F
R. Frank	e l l. l
Corn-grader	t (
Cotton chopper and cultivator	. (- k (-
Coupling-releasing mechanism.	
Crate, Knockdown. C. B. Weatherb, Crematory, Electrical. L. H. Gidding Crushing-machine. J. J. Smidd	р (
Crematory, ElectricalL. H. Gidding Crushing-machineJ. J. Smidd	д (8
Cultivator	t r (
Currents, Protecting articles from earthH. Gepper	. (
Curtain and shade support L. T. Diebol	t T
Curtain-pole. J. B. McGinle Cushion-fork. J. E. Pilgrin Custor chaping machine F. H. Pigran	n (
Cutter-shaping machineF. II. Pierpon Decanter, ContinuousL. von Tresckov	77
Decanter, Continuous, L. von Tresckov Deckle-strap, J. S. Pattevso Dental plate J. Petr Dental tool. F. H. Skinne Derrick S. Kaskot Die (Reissne). W. J. MacFarland et a Dish-washing device. W. H. Haskin Dispensing apparatus. L. C. Coope Display device. A. P. S. Deer Display device. A. Esk Display-packet H. A. Wilco Display-rack L. W. Welc Distilling apparatus. A. G. Waterhous	у (
Derrick	o (
Die (Reissne)W. J. MacFarland et a Dish-washing deviceW. H. Haskin	l. (is (
Dispensing apparatusL. C. Coope Display deviceA. P. S. Deer	er (
Display device, FormA. Esk Display-packet	z (
Display-rack	h (
Ditching-machineS. Mille	r (
Display-rack A. G. Waterhous Ditching-machine S. Mille Door C. S. and M. A. Gurne Door-casing clamp H. MacKenzi Door hanger and track, Combined.	e j
Door Metal	. I
Door, Metal	o]
Dough-proofing apparatus and work-table Combined. A. H. Pipe Draft-gear. W. H. Cotton et a Drier. F. C. Fleming et a	r I
Drill gage. Twist	i. k j
Duplicating-machineJ. J. Nagl	le]
Dye (2 pats.)O. Dressel et a Dye, Yellow azoV. Villiger et a	l. j l. j
Dye (2 pats.). O. Dressel et a Dye. Yellow azo. V. Villiger et a Dyeing half-wool goods. H. Walthe Dyeing-machine. J. Richardson et a Ear-irrigating device. E. P. Fowle Edger-table. G. S. Age	er 1 l. 1
Ear-irrigating deviceE. P. Fowler	er I
Edger-tante	. 1

Dyeing would yarn, Apparatus for use in
H. Resch, Sr.
Elastic webbing
Elastic webbing. H. Resch. Sr. Electric furnace. M. R. Conley Electric furnace. A. Voelker Electric heater. H. B. Gale Electric machines, Bridging-block for dyna- mo- F. W. Young Electric motor. G. H. Pfeil Electric track-switch. J. P. Tirney et al. Electrical heater. J. B. Fey Electrical hoop. P. Bramson Electricity-generating apparatus. E. C. Brice et al. Electroplating devices, Rack for. W. H. Rogers
Electric heater
mo
Electric motor
Electrical heaterJ. B. Fey
Electrical hoop
E. C. Brice et al.
Electroplating devices, Rack for
Electrothermal garments, Foot-warming attachment for
tachment forP. E. Charles
Elevator-door safety deviceB. Forbes
Elevator-gate, Automatic,, J. F. Finan
Elevator Safety-stopE. Koppell
Elevator. S. Ballard Elevator-door safety device. B. Forbes Elevator-gate, Automatic. J. F. Finan Elevator safety device. T. W. Jenkins Elevator Safety-stop. E. Koppell Elevators. Electric control for E. L. Dunn Embroidery-cutting machine. E. Egli Endpridery-hope.
Embroidery-cutting machineE. Egil Embroidery-hoopS. W. Gibbs
Embroidery-machineT. H. Joseph et al.
Embroidery-cutting machine
T. J. Chandounet
Engine-starterC. II. Smith et al. Envine-starter
Engine starting mechanism, Internal-com-
Institution
Engine-starter. C. Hunt Engine starting mechanism, Internal-combustion. II. M. Hallsworth Engines, Cooling-fan for explosive. E. A. Johnston
Engraver's tool. E. F. Mueller Evaporator. P. Kestner Evaporator. J. Parker
EvaporatorJ. Parker
Excavating machine spud. J. G. Fairbanks Expansible mold C. F. Moses
Explosive (3 pats.)G. Cornaro
Eyeglass-mountingG. A. Bader
Feed-water heater
Explosive (3 pats.)
The transfer of the transfer o
Fence-postB. Kennedy
Filter and the like, SandA. Tixler Filter, FaucetM. Havloe
Filter-press
Feeder, Poultry. O. E. Kutsche Fence-post. B. Kennedy Filter and the like, Sand. A. Tixier Filter, Faucet- M. Havloe Filter-press. A. M. Gray Fire-damp indicator. F. H. Schroeder et al. Fire-escape. A. H. Borden Fire-cracker making and finishing machine (Reissue). L. and J. Schulman Firemen, Air-supplying device for G. W. Shaw
Fire-cracker making and finishing machine
(Reissue)L. and J. Schulman
* * * * * * * * * * * * * * * * * * *
Fish-hook. J. S. Madderra Fish-hook. H. D. Balcom
Floor-scraping machineP. Rudd
Floor-surfacing machineH. L. Young Flooring clampR. H. Squires
Flower, ArtificialG. E. Chandlee
Fluid-actuating apparatus, Shock-preventing
Fly-catcher. A. L. Richard
Fly-paper holder, Sticky
Fly-trapJ. G. Vogt et al.
Flying-machineE. E. Lessard
Fogs, Method of and apparatus for lifting.
Fluid-actnating apparatus, Shock-preventing means for. J. A. Snee Fly-catcher. A. L. Richard Fly-paper holder, Sticky-G. and H. R. Laube Fly-trap. J. G. Vogt et al. Flying-machine. E. E. Lessard Flying-machine. I'. G. Lee et al. Fogs, Method of and apparatus for lifting. F. J. Drake Folding table. N. Schumacher Food, machine for manufacturing grain into form for. H. D. Perky
Food, machine for manufacturing grain into
form for H. D. Perky Form, Adjustable dress S. M. Moscheowitz Friction-drive and brake mechanism, Com-
Friction-drive and brake mechanism. Com-
bined
Finne-condensing apparatus. G. C. Richards
Funigating device, Poultry and animal E. F. Graefe Furnace
Furnace
Furrow-openerL. T. Rasmussen
Garment-hangerF. Edlund
Garment-supporterF. Hunter
Gas. Apparatus for the manufacture of
Gas generator, CompressedH. Parzeller
power. E. Fleischer Gas generator, CompressedH. Parzeller Gas lighter and extinguisher, Automatic.
Gas Obtaining naphtha from natural
G. M. Saybolt
G. M. Saybolt Gas-producerK. J. Sundstrom Gas, Purifying burnerC. L. Reese Gases for removing carbon monoxid there-
Gases for removing earbon monoxid there-
ment of E Ellenberger
Gasolene-can E. O'Connor Gasolene-separator J. F. Lowery Gate. C. A. Sandborg Gate. V. Hoxie
Gasolene-separatorJ. F. Lowery GateC. A. Sandborg
GateV. Hoxie
Gate-opener. D. L. Roe Gearing. F. H. Berger Gearing. E. A. Johnston Gearing. J. Du Shane
GearingE. A. Johnston
The state of the s
Glass-cutter, Hand-operated, A. W. Hornig
Glass-entter, Hand-operated. A. W. Hornig Glue-manufacturing apparatus L. Thiele Grader L. N. Morscher
Glass-entter, Hand-operated. A. W. Hornig Glue-manufacturing apparatus L. Thiele Grader L. N. Morscher Grain-binder bundle-transfer L. Anderson
Glass-cutter, Hand-operated. A. W. Hornig Glue-manufacturing apparatus I. Thiele Grader L. N. Morscher Grain-binder bundle-transfer L. Anderson Grain-binder shock-former. L. Anderson
Glass-cutter, Hand-operated. A. W. Hornig Glue-manufacturing apparatus I. Thiele Grader L. N. Morscher Grain-binder bundle-transfer L. Anderson Grain-binder shock-former. L. Anderson
Glass-cutter, Hand-operated, A. W. Hornig Glue-manufacturing apparatus. L. Thiele Grader. L. N. Morscher Grain-binder bundle-transfer. L. Anderson Grain-binder shock-former. L. Anderson Grave-digger's dirtbox. H. M. Stahl Gripping mechanism. J. T. F. Conti Uand-shears. H. J. Haegen Hauger-support. G. I. Rockwood et al.
Glass-entter, Hand-operated, A. W. Hornig Glue-manufacturing apparatus. L. Thiele Grader. L. N. Morscher Grain-binder bundle-transfer. L. Anderson Grain-binder shock-former. L. Anderson Grave-digger's dirtbox. H. M. Stahl Gripping mechanism. J. T. F. Conti Uand-shears. H. J. Haegen Hauger-support. G. I. Rockwood et al.
Glass-entter, Hand-operated, A. W. Hornig Glue-manufacturing apparatus. L. Thiele Grader. L. N. Morscher Grain-binder bundle-transfer. L. Anderson Grain-binder shock-former. L. Anderson Grave-digger's dirtbox. H. M. Stahl Gripping mechanism. J. T. F. Conti Uand-shears. H. J. Haegen Hauger-support. G. I. Rockwood et al.
Glass-entter, Hand-operated, A. W. Hornig Glue-manufacturing apparatus. L. Thiele Grader. L. N. Morscher Grain-binder bundle-transfer. L. Anderson Grain-binder shock-former. L. Anderson Grave-digger's dirtbox. H. M. Stahl Gripping mechanism. J. T. F. Conti Uand-shears. H. J. Haegen Hauger-support. G. I. Rockwood et al.
Glass-entter, Hand-operated, A. W. Hornig Glue-manufacturing apparatus. L. Thiele Grader L. N. Morscher Grain-binder bundle-transfer . L. Anderson Grain-binder shock-former . L. Anderson Grave-digger's dirthox H. M. Stahl Gripping mechanism J. T. F. Conti Uand-shears H. J. Haegen Hauger-support G. I. Rockwood et al. Harrow and planter, Combined
Glass-entter, Hand-operated, A. W. Hornig Glue-manufacturing apparatus. L. Thiele Grader L. N. Morscher Grain-binder bundle-transfer . L. Anderson Grain-binder shock-former . L. Anderson Grave-digger's dirthox H. M. Stahl Gripping mechanism J. T. F. Conti Uand-shears H. J. Haegen Hauger-support G. I. Rockwood et al. Harrow and planter, Combined
Glass-cutter, Hand-operated, A. W. Hornig Glue-manufacturing apparatus. L. Thiele Grader. L. N. Morscher Grain-binder bundle-transfer. L. Anderson Grain-binder shock-former. L. Anderson Grave-digger's dirtbox. H. M. Stahl Gripping mechanism. J. T. F. Conti Uand-shears. H. J. Haegen Hauger-support. G. I. Rockwood et al. Harrow and planter, Combined
Glass-cutter, Hand-operated, A. W. Hornig Glue-manufacturing apparatus. L. Thiele Grader. L. N. Morscher Grain-binder bundle-transfer. L. Anderson Grain-binder shock-former. L. Anderson Grave-digger's dirtbox H. M. Stahl Gripping mechanism. J. T. F. Conti Uand-shears H. J. Haegen Hanger-support. G. I. Rockwood et al. Harrow and planter, Combined G. H. Metcalf Harrow and seeder, Combined. F. A. Rodgers Harrow cleaner, Disk- C. E. Adams Hatch-opener G. Mazzolini Hatchets, Gage attachment for T. Litzenberg Hay and grain loader. J. W. Challoner et al. Headlight R. H. Welles Heating system. R. M. Dixon
Glass-cutter, Hand-operated, A. W. Hornig Glue-manufacturing apparatus. L. Thiele Grader. L. N. Morscher Grain-binder bundle-transfer. L. Anderson Grain-binder shock-former. L. Anderson Grave-digger's dirtbox H. M. Stahl Gripping mechanism. J. T. F. Conti Uand-shears H. J. Haegen Hanger-support. G. I. Rockwood et al. Harrow and planter, Combined G. H. Metcalf Harrow and seeder, Combined. F. A. Rodgers Harrow cleaner, Disk- C. E. Adams Hatch-opener G. Mazzolini Hatchets, Gage attachment for T. Litzenberg Hay and grain loader. J. W. Challoner et al. Headlight R. H. Welles Heating system. R. M. Dixon
Glass-cutter, Hand-operated, A. W. Hornig Glue-manufacturing apparatus. L. Thiele Grader. L. N. Morscher Grain-binder bundle-transfer. L. Anderson Grain-binder shock-former. L. Anderson Grave-digger's dirtbox H. M. Stahl Gripping mechanism. J. T. F. Conti Uand-shears H. J. Haegen Hanger-support. G. I. Rockwood et al. Harrow and planter, Combined G. H. Metcalf Harrow and seeder, Combined. F. A. Rodgers Harrow cleaner, Disk- C. E. Adams Hatch-opener G. Mazzolini Hatchets, Gage attachment for T. Litzenberg Hay and grain loader. J. W. Challoner et al. Headlight R. H. Welles Heating system. R. M. Dixon
Glass-cutter, Hand-operated, A. W. Hornig Glue-manufacturing apparatus. L. Thiele Grader. L. N. Morscher Grain-binder bundle-transfer. L. Anderson Grain-binder shock-former. L. Anderson Grave-digger's dirtbox H. M. Stahl Gripping mechanism. J. T. F. Conti Uand-shears H. J. Haegen Hanger-support. G. I. Rockwood et al. Harrow and planter, Combined G. H. Metcalf Harrow and seeder, Combined. F. A. Rodgers Harrow cleaner, Disk- C. E. Adams Hatch-opener G. Mazzolini Hatchets, Gage attachment for T. Litzenberg Hay and grain loader. J. W. Challoner et al. Headlight R. H. Welles Heating system. R. M. Dixon
Glass-cutter, Hand-operated, A. W. Hornig Glue-manufacturing apparatus. L. Thiele Grader. L. N. Morscher Grain-binder bundle-transfer. L. Anderson Grain-binder shock-former. L. Anderson Grave-digger's dirtbox. H. M. Stahl Gripping mechanism. J. T. F. Conti Uand-shears. H. J. Haegen Hauger-support. G. I. Rockwood et al. Harrow and planter, Combined

Hose-clamp-applying toolM, O. Lewis	Oyst Pack
Hulling aud griuding machine	Paek
ice-can	for Pack Pails
Ice-cutting machine. H. L. Pearman et al. Ice-skid switch C. H. Martell	Pape Pape
Ice-dag. J. D. Berryman Ice-cream receptacle. L. R. Steel Ice-cutting machine. H. L. Pearman et al. Ice-skid switch. C. H. Martell Ignition device. F. A. Glasgow Incubator egg-tray. W. M. Lininger Incubator-heater. O. P. Shoemaker Insole and arch-support. Pneumatic.	- Раре
Insole and arch-support, Pnenmatie	fac Pare
Instituting apparatus	Parq Pass
Internal combustion engineJ. N. Kieffer	Pera Perf
Ironing-board-cover fasteniug device G. A. Hall Jack. G. W. Wilmot Jack. L. Willour Jute and like fibrous material woolly, Rendering. P. Schmid Laces, Machine for forming shoe-	me Perf Phor
JackL. Willour Jute and like fibrous material woolly, Ren- dering P Schmid	Pian Picti Pign
Laces, Machine for forming shoe	Pign Plait
Ladder for sleeping-cars W. A. Cooper Ladle	Plan Plan Ploy
Ladle A. E. Johnsou Lamp (2 pats.) W. C. Coleman Lamp, Arc- W. F. Davis Lamp, Bracket- W. C. Coleman Lamp-chimney heating attachment.	Plug Pock
Lamp-chimney heating attachment	Port Post
Lamp-chimney heating attachment	Pow Pow
Lamp-socket attachment, incandescent L. H. Havding Lamp socket, Electric- (Reissne) G. W. Goodridge Lamps, Implement for manipulating and	Pow Pow
Lamps. Implement for manipulating and mounting filaments of electric incandes-	Pow Pow
cent P. G. Triquet Lantern-giobe lifter J. H. Hill Lanterns, Bail-beaving for A. R. Pritchavd	Pow
Lauterns, Bail-bearing for, A. R. Pritchard Larch, Gate- H. G. Schenck Lavatory. J. W. Sharp, Jr. Leak-detector. J. Boekel	Prec na
Leather Reconstructed M Mason	us Pres
Levees, Device for damming and repairing breaks inC. F. Francisco Lifting-jack and turn-table, Automatic	Prin Prin
Line-casting machineD. S. Kennedy	Prin Prin
Line-casting machineR. M. Bedell Liquid-fuel burnerL. S. Provin Liquid-metevR. Lohse	Prop
ency of	Puly
Locomotive ash-pan. L. C. Mooney Locomotive-teuder. L. W. Galloway	Pum Pum Pum
Locomotive-teuder,, L. W. Galloway Looms, Adjustable holder for insulating E. H. Kruse	Pun
Low-quad-mold-control mechanism	Rad Rad Rajl
Lubricator. J. A. Charter Lubricator. C. Reid Machine-tools, Work-holder for. T. Brick	Rail Rail
Magazines, Holder for insertible	Rail- Rail Rail
Magazines, Holder for insertible. Mail-bag deliverer. F. I. Brown Maize or Indian corn, Treating	Rail Rail
Manure-receptacle for vehicles	- Rail - Rail - Rail
Match-safe	in cil
Matrix-setting and line-casting machine II. Degener Measuring and cutting machine, Cloth	Rail in
Measuring installation Electrical	Reel Reel
Metal tubes or the like, Manufacture of	Refu Refu
Metals, such as gold, silver, copper, or nickel, from their native ores, Extract-	Rela Rela Resi
nickel, from their native ores, Extracting. W. D. Rennie Metallic fender and mud-guard. A. Little Metallic tie and rail-fastener. C. E. McLane	$rac{ ext{Resi}}{ ext{Roll}}$
Metallic tie and rail-jointL. Knott	m Roo Rota
R. W. Gallagher Milk-pasteurizing apparatus. J. Willmann Milling-tool. E. A. Searles Mineral briquetG. K. Hollister, Jr. Mining drill, Coal R. C. Britton Mixer H. E. Townsend Maistener Envelope J. Zittle et al.	Rot: Rub Ruff
Mineral briquetG. K. Hollister, Jr. Mining drili, CoalR. C. Britton	Sad
Mostener, Envelop O. L. Zittle et al. Molding-machine. A. Deville Molding-machine. J. J. Fitzsimmons	Sasl Sasl Sasl
Molding-machineJ. J. Fitzsimmons Molding-machineC. Herman Vator-regulating means Electric-	Sasl Saw Saw
Molding-machine	Sera
Muller	Sere fo See
Musical instrument, Mechanical G. D. Rego	Self Sew
pneumatic	Sew st
paint-removersJ. M. and J. A. Wilson Numbering-headF. and C. A. Meisel Nut-lockA. L. Sargeant	Sew ar Sew
Nut-lock G. Cassady Nut-lock C. L. Dunham	Sew
Oil-burner. G. F. Tweedy Oil-burner. R. Liddell Oil-burner. G. Pontbriand	Sew
Nut-lock G. Cassady Nut-lock C. L. Dunham Oil-burner C. F. Tweedy Oil-burner G. F. Liddell Oil-burner G. F. Wissinger et al. Oiler for pressure-fluid tools L. C. Bayles Ore-mill J. P. Smythe Ore-roasting furnace C. Pfaul	Sha Sha
	She She
Outlet-boxes, Closure for openings of H. T. Paiste Overhead switch	She
Packaging and wrapping machine	Sho

```
ster-ean, ... L. R. Steel chaging and wrapping machine ... G. Townsend cheing tea or other substances, Machine or ... E. C. Lovell chigs. Self-adjusting metallie .W. B. Shull lis, Strainer-top for milk ... F. Ansley beer-bag-making machine ... G. Townsend ber-feed mechanism ... H. C. Gammeter per, Means for stripping wall ... F. B. Jackson or or cardboards, Machine for manuacturing corrugated ... C. Thiebault feer, Frnit ... W. S. Dixou querry-scraping machine, Portable ... H. Hecht senger-recorder ... H. Yager rambulator ... M. Braham aforating-machines, Web-guiding attachment for ... J. S. Bancroft et al, forator ... L. X. Meadows concraphic records, Producing .1. Kitsee mo-casing ... H. Pohlmann turne-hanger ... W. Kohn ment ... A. Moffatt diting-machine ... E. D. Latshaw et al, unter ... W. C. Thomas miter. Corn ... L. A. Lawhon ow-point mount ... H. H. Swindle ing, Fusible ... D. G. Foley chet, Safety ... A. W. Fernans rtfolio, Collecting ... W. Witgenstein stal card and letter, Combination ... shall consider the swer-transmission mechanism ... H. Laake wer-transmission mechanism ... H. Laake wer-transmitting apparatus ... J. Dunlop wer-transmitting mechanism ... W. E. Bock wer-transmitting apparatus ... J. Dunlop wer-transmitting mechanism ... W. E. Bock wer-transmitting apparatus ... J. Dunlop wer-transmitting mechanism ... W. E. Bock wer-transmitting apparatus ... G. W. Conine escencing food products ... F. Cowing the serving food products ... F. Cowing the serving food products ... F. Cowing the serving food pr
             I-joint G. H. Burge
I-joint J. Wolfe
I-joint J. Wolfe
I-joint T. Hunter
I-joint J. Wolfe
I-sander Pneumatic J. Wolfe
I-sander Pneumatic W. B. Shull
Iway-erossing J. C. Bradshaw
Iway-spike L. P. Terry
Iway-spike H. Jeffrey
Iway-tie C. C. Martin
Ilways and the like, Means for advanc-
ing and locking machines adapted to fa-
ilitate construction and repairing of ...
C. G. Smith
Ilways, Machine for transporting and lay-
ing out ties in the construction of ....
     arpening device for knives and the like.

B. Brower et al.

A. H. M. Swan

eet feeding and folding mechanism....

H. M. Barber

ells to the shuttle, Feeding...

F. R. Hammitt et al.

be-finishing machines, Dust-eatcher for...

T. Wertz et al.
```

Shoe. J. F. Davis Shoes, Machine for forming fastening members for welt. W. F. Fraser Sieve-cleaning device. A. H. Kirk Sifter, Flour. E. T. Farmer Signaling apparatus, Electric. E. Pope Slip-inserting mechanism. F. M. Peters et al. Smoke-conveyer. J. T. Harper Snap-switch, Pendant. R. E. Leve Snow-plow. J. E. Pillionnel et al. Sodium-sulfate crystals, Dehydrating. J. Davis
Sieve-cleaning deviceA. H. Kirk Sifter, FlourE. T. Farmer Signaling apparatus, ElectricE. Pope
Slip-inserting mechanism. F. M. Peters et al. Smoke-conveyerJ. T. Harper Snap-switch, PendantR. E. Leve
Snow-plowJ. E. Pillionnel et al. Sodium-sulfate crystals, DehydratingJ. Davis
Sofia-davenport. J. Davis Sofia-davenport. A. C. Klopping Solder. J. N. Daudelin Solder-applying device, LiquidH. K. Smith Sound-recording and reproducing machine.
Sound-reproducing or sound-recording machine
Spark and cinder extinguisherL. T. Sicka Spark-plug, MagneticF. S. Perrin Spectacle-glass, ToricM. von Rohr
Spindles into cops, Machine for inserting. E. Herzog Spinning machines Cleaning device for lift
Spark-plug, Magnetie. F. S. Perrin Spectacle-glass, Toric. M. von Rohr Speedometer. J. F. Wilkie Spindles into cops, Machiue for inserting. E. Herzog Spinning-machines, Cleaning device for lifting-rods of. W. G. Ragsdale Spring-casing B. R. Myers Spring-wheel E. Harris Spring-wheel A. Konrad Stack-cover, Corrugated galvanized. F. W. Martin Stamp-cutting machine. S. T. Tracy et al. Starter, Automatic reversing J. Hofle
Spring-wheelA. Konrad Stack-cover, Corrugated galvanized F. W. Martin
Ottoom boiler High programs W Cohnidt
Steam-honer, Figh-pressure. W. Schmidt Steam generator and reheater. F. A. Haughton Steering device. J. F. Douthitt Stereotype-casting mold. W. Scott Stoker, Mechanical E. S. Clark Stower, Storage stond J. Willow
Stoker, Mechanical E. S. Clark Storage-stand L. Willour Stove R. E. Adams Stove oven, Gas. F. L. Goodrich Strainer H. B. Holt
Stove oven, GasF. L. Goodrich StrainerH. B. Holt Sucrose, ExtractingC. Rosenow
Switch and signal mechanism, Automatic. C. M. Hurst Switch-hox Adjustable F. H. Kruse
Switch-box, Electric. M. M. Disler Switch-lever. C. A. Dusch Syringe, Vaginal. D. L. Aber
Tachometer, MagneticJ. K. Stewart Tag for umbrellas, NameJ. Masko Talking-machine motorH. C. Miller
Tank control, Flush- B. S. Hodgkills Telegraph-relay. Z. M. Miller Telegraphy P. B. Delauy Talaphana W. C. Lockwood
Strainer. H. B. Holt Sucrose, Extracting. C. Rosenow Sweeping-machine. P. Haerst Switch and signal mechanism, Automatic. C. M. Hurst Switch-box, Adjustable. E. H. Kruse Switch-box, Electric. M. M. Disler Switch-lever. C. A. Dusch Syringe. Vaginal. D. L. Aber Tachometer, Magnetic. J. K. Stewart Tag for umbrellas, Name- J. Masko Talking-machine motor. H. C. Miller Tank control, Flush- B. S. Hodgkins Telegraph-relay Z. M. Miller Telegraphy P. B. Delauy Telephone. W. C. Lockwood Telephone-calls, System for registering. E. L. Buxbaum Telephone lock and call-register. E. L. Buxbaum
Telephone-mouthpiece, Sanitary
Telephone system
Tclephones, System for registering calls and locking. E. L. Buxbaum
Telephone lock and call-register. E. L. Buxbaum Telephone-mouthpiece, Sanitary. J. B. O'Hara Telephone-receiver, Auxiliary. W. Schwarzhaupt Telephone system. A. H. Dyson Telephone-transmitter-cooling device. C. E. Egner et al. Telephones, System for registering calls and locking. Thread-finishing machine. W. C. Keyworth Threshing-machine. A. Reasou Ticket-delivering apparatus. D. Sanneman et al. Tile. E. F. Wiederholt Time-indicator. G. W. Robbins Tire-protector. R. G. Hartle Tire-setting machine. H. M. Lourie Tire. Spring vehicle- E. Hess
Tile. E. F. Wiederhalt Time-indicator. G. W. Robins Tire-protector. R. G. Hartle
Tire-setting machine
Toe or boot clip for the pedals of cycles and the like
Tire-protector. R. G. Hartle Tire-setting machine H. M. Lourie Tire. Spring vehicle E. E. Hess Tobacco-pipe W. A. Pratt Toe or boot clip for the pedals of cycles and the like R. Wineberg Tool, Combination G. F. McKee Tool-holder and tool-post L. T. Weiss Tooth-bending attachment H. W. Sage Tower, Pneumatic observation J. J. Stoetzel Toy H. P. Townsend Toy device J. N. Mitchell Toy merry-zo-round J. J. Connolly. Jr. Toy, Spinning O. Heider Toy torpedo J. Berg Trace-lock E. V. Burrow Track-laying machine C. G. Smith et al. Trap J. L. Hayes Tray, Ring W. B. Dahl Trigger safety-lock H. F. Siegel Trowel C. Wright Truck, Can-G. L. Stanley Truck, Car-A. J. McCauley Truck side frame Car-H. W. Blake Truck, Warehouse-R. S. Bergsather Trucks, Deck for S. M. Chase Tube beader and expander W. Flanagan Tube-extractor T. J. Boroff Tubes from fibrous materials Machine for making C. T. Hansen Tubs or buckets, Machiue for uotching lids or covers for F. Arlt Turbine R. H. Rice
Toy deviceJ. N. Mitchell Toy merry-go-roundJ. J. Connolly, Jr. Toy, SpinningO. Heider
Toy torpedo. J. Berg Trace-lock. E. V. Burrow Track-laying machine C. G. Smith et al.
Tray, Ring
Trowel
Truck side frame, CarH, W. Blake Truck, WarehouseR, S. Bergsather Trucks, Deck forS, M. Chase Truck beader and expander. W. Flanagan
Tube-extractor
This or buckets, Machine for notching lids or covers for. F. Arlt Turbine. R. H. Rice Turbine, Gas. E. K. A. Baumann Turbine governing mechanism. R. H. Rice Turbine governing mechanism. Mixed-press-
Turbine governing mechanism. R. H. Rice Turbine governing mechanism. Mixed-press- ure (Reissue). F. Samuelson
ure (Reissue)
Type-casting machine mold and mold-adjusting mechanismF. H. Pierpout Type-casting machines. Centering-pin adjustment forJ. S. Bancroft et al. Type-casting machines. Matrix-holder forJ. S. Bancroft et al. Type-writer attachment B. Dummit
23 pe-willer attachment
Type-writer platens, Clutch mechanism forG. M. Howe
Type-writing machine
Type-writing machineH. M. Ashe et al. Type-writing machineL. Ney

Type-writing machine (2 pats.)
Type-writing machine (2 pats.)
Type-writing or other machine time-controlling mechanism. C. B. Corcoran Umbrella, Foldiug. A. C. Pfaff et al. Upsetting-machine. G. H. Revnolds Vaive. C. N. Coon et al. Valve-indicator. J. A. Cole Valve, Irrigation- V. V. Messer Vaive, Locomotive- C. W. Mannooch Valve, Relief- E. Rothlisberger Vegetable-cutter. H. E. Ramsever
Upsetting-machineG. H. Reynolds Valve
Valve indicator C. N. Coon et al.
Valve, Irrigation
Valve, ReliefE. Rothlisberger
Vegetable-cutter. H. E. Ramseyer Vehicle. A. E. Schultz
Vehicle-brake
Vehicle steering mechanism, Self-propelled,C. B. aud C. B. Hatfield, Jr. Vehicle-wheelN. S. Airhart et al. Vehicle-wheel, ResilieutG. Barker
Vehicle-wheel
venicle, wheeled
Vehicles, Front driving and steering mechanism for motor, M. W. Sappington et al.
Vending-machine for postage-stamps Auto-
Vibrations of bodies, Device for damping.
matic. T. W. Suggs Vibrations of bodies, Device for dampling. H. Frahm Wagon-box clamp. W. C. Harp et al, Wagon-brake. H. B. Deakins
Wagon-dump
Wagon side-boardC. M. Haeske Watchmaker's applianceA. Lepre Water-controller, AutomaticW. E. Miller
Water-controller, AutomaticW. E. Miller Water-gageJ. J. Menville
Water-gage. J. J. Menville Water-heater. J. H. Freemau Water-hoist. A. Wickey
Water-motor. P. R. Rates et al. Water-softener. J. E. Bain
Water-supply system for houses, &c
Weather-strip, Meeting-railS. P. Bricker Weight-recording apparatusL. V. Labelle
Wheel and axle Combined G P Eustis
Wheel-flange lubricatorP. Conniff Whin-socket lockW. A. Peters
Wheel-flange lubricator P. Conniff Whip-socket lock W. A. Peters Whistle, Steam J. H. Yates Windmill J. C. Hanson
Window-screen E H Lunken Wire frame G K Rix
Wire-stretcherA. J. Gibbens
Wool-washing machineG. Malard WrenchW. J. Stolz
I a a serie de la companya de la com

Issued April 25, 1911.

MECHANICAL PATENTS.

Adding deviceE. C. Dilworth Adding-machiue power-driveJ. G. Vincout Adhesive stickA. W. Harrington, Jr. AeroplaneW. Stemmer Air-brake-system indicating deviceC. L. Courson
Air-brake-system indicating device. C. L. Courson Air-compressor. J. Crocker Anchor-board fasteuer. R. E. Robbius Anchor, Sea J. A. Rosvold Animal-check. W. L. Bear Animal-trap. T. Kinkade Antiskidder, Wheel H. Heer Antislipping device. O. Falkenwalde Anvil attachment. T. F. Spaiue Ash-ejector, Under-water. J. F. Metten Automatic sprinkler. G. I. Rockwood Antomobile. L. Hermau Automobile tire-trunk (2 pats.) I. S Kallis et al. Aviation-motor. F. G. and A. E. Dieterich Axle clip, Wagon H. C. Hart Axle-lubricator. J. W. Jones Bag-fastener. C. Hiering et al. Baking apparatus. G. E. Mayle et al. Baking preparation. W. B. Brown et al. Bailing-press. A. Helm Bamboo-connecting device. J. F. Sandell
Antomobile
Aviation-motor. F. G. and A. E. Dieterich Axle clip, Wagon
Bank, Savings (3 pats.)
Baking preparationW. B. Brown et al. Bailing-pressA. Helm Bamboo-connectiug deviceJ. F. Sandell Bank, SavingsW. S. Harpster Bank. Savings (3 pats.)C. Fisher Batteries, Machine for filling dryP. P. Nungesser Batteries, Regeueratiug storageC. Luckow Bed, CouchF. M. Tinkham Bed. DaveuportH. Stanyon Bell. BarJ. S. Whitney et al. Belt driving mechanism for reciprocating parts of machinesG. H. Benzon, Jr. Bending-machineJ. E. Morse et al. HinderC. H. Wiley Pinder Loose-leafB. Wilson
Blades, Edge-turning device for
tive
Bell, Bar
Bull protector M. C. Salothorn
Bundle-binding machine
Burnishing machine (3 pats.)
Burnishing machine (3 pats.)

```
Calipers, Micrometer-....F. O. Jacques, Sr. Camera, Photographic.....R. Goldstein Can-washing machine, Milk-....S. P. Hay Cane stripper and topper H. T. Beauregard Car.....F. X. Malocsay Car center-bearing...W. J. Stewart et al. Car-coupling......A. Tawlks
  Car center-bearing. W. J. Stewart et al. Car-coupling. A. Tawlks Car coupling, Railway- E. P. Kinne Car-derailing device, Mine- F. W. Byrne Car-door . R. B. Friend et al. Car-door hanger C. F. Reigh Car-door lock. W. J. Martin Car-fender J. H. E. Branson et al. Car-fender R. S. Cormier Car-fender Safety C. B. Fithiau Card, Index- J. A. Frantz Cardboard and roofing-plate, Reinforced . H. Schlisske
   Cardboard and roofing-plate, Reinforced.

II. Schlisske
Casting apparatus.

Center-sill construction...C. A. Lindstrom
Cherries, Device for facing ripe.

II. G. Stelling
Chilled pass-rolls, Apparatus for forming.

A. I. Crook
    Chuck, Drill- F. F. Hepler
Church-dasher H. C. Gross
Chute and screener, Combined
H. W. Sanner
Cigar makers' and twisters' seat or stool.
C. Busgen
     Circuit-breaker. J. D. Bradford et al. Circuit-interrupter. E. M. Tormin Circuit making and breaking mechanism.
    Clutches, Manufacturing pressed-steel cases for frictiou. R. F. Collins Cock, Gage-P. J. Williams Coil-heater. A. H. Merrill Coin-packaging device. W. D. Heer Colored glass. H. M. Shreiner Commutators, Power-driven tool for dressing. R. S. Freeman Composing-machines, Quadding apparatus for typographical. II. Pearce et al. Concrete-block mold. J. Hartley Condenser. M. Leblanc Conductor-wire counling A. D. Duyall et al.
      Converter or vessel for refining iron and steel. B. Talbot Cooker R. J. Walker et al. Cooker and toaster. Electric. R. Wiles Coop. Chicken- F. M. Richardson Core-barrel, Contractible and expansible. C. F. Murray Corn-grader, Rotary. O. E. Craig Corn husking and shredding machines. Shock-handling attachment for J. B. Schuman Corset and bust-form therefor. C. Mayer et al. Cosmetic-booklet. S. J. Hudson Cotton chopper and cultivator. J. L. Erwin Crate, Folding. E. A. Maker Cream-cone filler J. Edwards Cream-ripener H. J. Grell Cuff and sleeve protector, Adjustable. A. G. Maynard Cultivators Straddlenger W. H. J. Grell
```

Embroidering-machine shuttles, Protective device for. M. Schoenfeld Engine attachment, Gasolene-, E. J. Balke Engine-cooling system, Explosive-, O. B. Jacobs Engine-fuel-feeding means, Explosive-, O. B. Jacobs Engine-muffler Engine-starter, P. W. Hødgkinson Engine-starter, P. W. Hødgkinson Engine-starter, Internal-combustion-, J. W. Fitz Gerald Engine-starting device. L. B. Hallock et al. Engine starting-vaporizer, Explosive-, J. F. Garcia et al. Engine-steering mechanism, Road-, Embroidering-machine shuttles, Protective Engine-steering mechanism, Road-...G. A. Anderson
Engines, Process and apparatus for seavenging internal-combustion, E. W. Stevens Fastening device. J. H. Skeltou
Faucet, Filtration. B. Berger
Feed-regulator. J. W. Scarle
Feeding and measuring device. Auromatic. Furnaces, Underfeed grate device for heat-Furnaces, Underfeed grate device for heating. W. H. James
Furrow-opener. L. T. Rasmussen
Furrow-opener, Double-disk. H. D. Hunter
Gage. W. Richardson
Game. W. J. Rigney
Game apparatus. A. B. Hill
Garbage-treating apparatus. J. G. Walker
Garment-hanger F. Bement
Gas-furuace. W. Dunn
Gas-heater. C. Hohmann
Gas producing and consuming apparatus.
H. L. Doherty
Gas-producing apparatus. Regulation of the
temperature of the fuel-bed in.

Jruction or terminal boxL. Gudeman	Ra
C Hook	R:
Kneading-machine. J. Jony Knitting-machine. W. F. Rolston Labeling and stamping machine. L. Fischer	R
Lacquered ware. Machine for mannfactur-	R
Lacquered ware. Machine for manufacturing (2 pats.)J. H. Engleman	Ra
Ladder	R
Lamp, ElectricE. Beancoudray et al. Lamp, Incandescent electricH. T. Crane	R
Lamp, Spirit- C. F. Booth Lamp, Street- H. E. Streiber Lantern A. L. Edwards	\mathbb{R} :
Lantern	R
Lantern bail-bearingA. R. Pritchard Latch, GateJ. H. Akins	R
Lantern bail-bearing. A. R. Pritchard Latch, Gate J. H. Akins Latch-operating mechanism, Pneumatic door J. Angerstein et al.	133
Lathe-carriage	R
Lathe-carriageG. A. Steinle Leaf-like sheets and making the same, ThinC. J. Healy	R
Lens-grinding apparatus, Toric	
Ligatures, &c., Container for G. M. Stratton	R
Lithographic-stone-graining device	R
Load-carrier. W. H. Niles Load transferring and depositing apparatus.	R
Load transferring and depositing apparatus. W. D. Ord	R
Lock	R
Lock	R
Lock	8:
Loom shuttle-tension mechanism	7. 7.
Looms, Thread-cutting temple for	
Looms, Thread-cutting temple forE. S. Stimpson Magnetos, Distributor forF. B. Hays et al.	7. 7.
Mail-chute J. W. Cutler Manipulator E. J. McIlvried Manure-spreader T. Brown	7. 7.
Manure-spreader	- 50
Match-box A. Zicard Measurement-indicating instrument.	80
Measuring and calculating instrument	7. 7.
Measuring and calculating instrument J. D. Pierce	- 54
J. D. Pierce Measuring device, Skirt S. M. Allen Measuring tensile and break strength. An-	7, 7,
Measuring tensile and break strength, Apparatus for L. Schopper	- 80
Meat compressor and retainer	7. 7.
Mechanical playing instruments, Coin-controlled mechanism forA. J. Pohlmann	7. 7.
Metal-cutting shearsF. R. Dalbey	
Metal-cutting shears. F. R. Dalbey Milling-cutter. L. A. Cornelius Mining-machine cutter-head. J. C. Hirst	S
Mirror, Toilet- G. H. Pratt Mortise-guide. J. W. Monette et al. Mortising-machine. A. O. Vick Motor controller, Electric- F. T. Taylor	8
Mortising-machine	8
Motor controller, ElectricF. T. Taylor Nail-cutting diesJ. Wikschtrom	7.
Nail-cutting dies. J. Wikschtrom Napping-machine. J. Ermbter Nest for fewls, Trap. G. T. Merritt Nurling-tool. H. Miller, Jr.	5
Nurling-tool	8
- Note and note tooks sees sees and by Streben	8
Nut-blanks, Mechanism for smoothing and polishing the edges of	81
Nut-lockG. Harper	- 8
Nut. ScrewE. Kener. Jr.	5.5
Nuts, Making flangedF. A. Neider	8
Oil-burnerL. Duncan	
Nnt-shelling machine. W. A. J. Roach Nnts, Making flanged. F. A. Neider Oil and sand separator. L. W. Brown Oil-burner. L. Dunean Oil-burner. Hydrocarbon. F. Stolz et al. C. W. Brewbaker et al. Oil-cup, Antomatic. R. K. Feauster Oil-furnace. C. J. L. King Oil regulator, Fuel. E. M. Jones 1-para-dimethylaninophenyl-2. 3, 4tri- methyl-5pyrazolone and making same.	7. 7.
F. Stolz et al.	- 8
Oil-cup, AntomaticR. K. Feauster	XXXXXXXX
Oil-furnace	7. 7.
1-para-dimethylaminophenyl-2. 3. 4tri-	8
Ore-feeder for separating machines	5.
Ponten	8
Package and toy. F. Gardner Package-packer. A. K. Robbins Packing, Rod. G. C. Potts et al. Painting-machine. J. W. Harris et al.	8
Painting-machineJ. W. Harris et al.	8
Pasteurizing apparatus for milk and other liquids L. S. Pfonts	7. 3
Paving material, Apparatus for preparing H. J. Rufli	XXXXXXX
Paving work, Machine for use in street	3
Pen-extractor II F Jones	8
Pen-extractor	
Photography, Screen or film-support for use in F. A. Fifield	8.8
in F. A. Fifield Pile-shell M. M. Upson	%
Pinochle-counterD. F. Dodge	3. 3.
Planter, Disk. G. Mitts et al. Plow-beam. E. P. Kirby Plow, Disk. J. B. Donald Plow, Subsoil- (2 pats.). C. W. Hicks Plows, Row-gage for. L. S. Horton Plowing-machine. D. F. Knster et al. Plug-retriner. J. J. Taylor et al. Pommeling-machine. A. C. Eyfe	Š
Plow, DiskJ. B. Donald	,
Plows, Row-gage forL. S. Horton	,
Plowing-machineD. F. Knster et al.	7, 7,
	. 8
Potato-bug collecting and destroying ma- chine	. 9
chine. A. C. Sloan Potato-digging machine F. G. Bridger Powder-duster W. H. McKnight	7, 7, 7, 0, 7, 3, 3, 3
Dwintow's gallos (2 patr) A. H. Stockell	
Printing-press paper-guideV. II. Stratton	7 %
Protector unit and means for mounting	3, 3
Printer's gamey 12 pats. A. H. Stockall Printing-press paper-guide. W. H. Stratton Protector unit and means for mounting same, Individual. F. B. Cook Pulley. J. W. Hamilton Pulley, Window-shade catch. A. N. Fries Pump. R. E. L. Holmes Pump-base. T. M. Sheets	7. 7. 7.
PumpR. E. L. Holmes	3. 3.
Pump-baseT. M. Sheets Pump, Centrifugal, turbine, and similar	9
rump, Centifican, turbine, and similar	
Pump, GasR. Whitaker et al. PunchL. E. Gilchrist	9
Punch. C. H. Higgins Punching-bag apparatus. G. F. Fanning Punching-bag apparatus. N. W. White	9. 9. 9. 9. 9.
Punching-bag apparatusN. W. White	5
Rail bond, Electrical——— H. B. Conway	8
Lian cond, Erecontent in the D. Contrat	3.

Rail-fastening C. B. Silk tail-joint W. H. Jordan tail-joint T. W. Williams Pall-joint W. Grzybowski	i
Railway block-signal system L. Johnson Railway-crossing W. A. Blankinship et al. Railway-rail tie and fastener	
Rail-fastening C. B. Silk Rail-joint W. H. Jordan Rail-joint T. W. Williams Rail-joint W. Grzybowski Railway block-signal system L. Johnson Railway-crossing W. A. Blankinship et al. Railway-rail tie and fastener W. T. and C. J. Wheeler Railway safety-switch L. J. Kieffer Railway-spike S. E. Bell Railway-switch Automatic J. C. Preston Railway-tie S. E. Bertier Railway-tie, Reinforced-composition	
Railway-tie, Reinforced-composition	
Railway-tio, Reinforced-composition. R. Hayes Railway-track, Portable. O. W. Meissner Rand. L. H. Shaw Razor, Safety- R. Taylor Record-receptable follower structure S. T. Walton Recd. H. Cote Reflecting fixture or chandelier W. H. Spelcer	
W. H. Spencer Refrigerating systems, Automatic regulator for F. A. Pollard Register and recorder, W. I. Ohmer et al.	
Reflecting fixture or chandelier	
dling of E. S. Stratton Runaways, Device for preventing U. G. Phippen Safe, Wall A. J. Anderson Sand-blasting nozzle J. P. Walsh Sausage-studing-machine nozzle	
Sand-blasting nozzle	
Sausage-stuffing mozzle	•
W. H. Strange Seal.	
Scaling device, BottleL, I. Crecelius Scaling machine, BottleC, J. Marks Scaling-machine, CartonT. Moss ScatE, A. Thomas	
Self-leveling table	i L
Sewing-machine buttonhole cutting and stitching attachment	
Sewing-machine presser-foot mechanism (2 pats.)	:
Sewing-machines, Chain-stitch looper for lock-stitch. A. G. Lamb Shade and curtain-pole support, Combined window A. R. Eshbaugh) !
shaft and curian-pole support, Combined window. A. R. Eskbaugh Shaft-hanger. C. W. Levalley Sharpener, Planer-knife. H. J. Mitchell Sharpener, Scissors P. Riley Sharpening device, Lawn-mower	- !
Shears, Tool for opening and stretching. Shears, Tool for opening and stretching. F. Portille Sheet-metal roller. Sheet-separating means. B. Gastafsor Shock-absorbing device. E. Rimailhe Shock-Curset. G. Kriege.)
Shock-absorber J. Lend Shock-absorbing device E. Rimailhe Shoe Corset G. Krieger Shoe-horn C. E. A. Merrow Shoe-uppers, Means for tying W. E. Ellis	ì
Shoes, Repair-tip for	
Signaling device. Signaling system, Supervisory	t !
Slide-brake, SafetyC. Corbean, Jr Smoke-preventing furnaceJ. N. McKee Snap-hookH. E. Coble Socket-wrenchH. R. Palme	9 1
Socket-wrench	i
Spacer, Rotary. A. H. Lake, Jr Spatula. H. C. Kniffer Speed-controller, Automatic electromag netic. H. Hertzber; Spinner-machine thread-guide, J. S. Furtard	1
Spinning-machines, Thread-breaking device forF. Q. Hartman	e u
A. E. Rhoade Spinning-rings, Fasteuing device for permit ting the interchange of . L. T. Houghton Spittoon, Fountain	8 - 11 e
Spinning or twisting machine ring	l V e
Stalk-cutter C. Harpe Stamp, Hand. E. Eishe Stanchion, Cattle- W. Loude Steam-generator J. P. Badenhause Steam-trap P. J. Hefferna	r r n
Steam-trap. P. J. Heffernar Steel, Manufacture of T. J. Hesket Steel tie. P. Campbel Stoker, Antomatic. W. T. Hann. Stone and other uses, Machine for dressin	+
Stone and other uses, Machine for dressing or surfacing	g t l.
stone and other uses, Machine for dressin or surfacing G. H. Condie Storage battery E. J. Knapp et al Stove and garbage-destroyer. Combined D. S. Richardso Stove. Gas L. Dickerman et al Street-sweeper attachment . J. Wiess et al Stretcher for fractures T. A. Christ Swinging gate Y. Masuzaw Switch device. Electric R. D. Moye Switch powerting mechanism P. A. Morrise	l. l. y
Switch device. ElectricR. D. Moye Switch-operating mechanism.R. A. Morrise	r y

Cwitch-tongue
tank-gate
Carget-trap-operating mechanism
reeth. Device for retaining fillings in
Felegraph-transmitterB. P. Haves
Telegraph-transmitter caseB. P. Hayes
Felephone memorandum device
Telephone meter systemG. Deakin
relephone repeater-circuitC. A. Kruckow
Telephone signaling systemE. M. Tormin Telephone systemF. G. Agrell
Telephone-transmitterS. A. Koltonski
Thermometer holder, Individual E. T. Baker Thermometer receptacle or caseJ. Howe Thermometers and the like, Receptacle or case for
Thermometer receptacle or caseJ. Howe Thermometers and the like, Receptacle or
case for
Threshing-machineJ. E. Miller
Tire. E. P. Beach Tire. S. Z. de Ferranti Tire, Automobile- H. E. Rechner Tire, Automobile- G. E. Tomlinson Tire-building machine R. Rowley
Tire, Automobile
Tire, AutomobileG. E. Tominson Tire-building machineR. Rowley
Tire-building machineR. Rowley Tire-removerS. C. Plant Tire, Vehicle-wheelH. Mulholland Tobacco-barnG. Kretzschmar Tobacco-plug entterH. C. Izor Tool, Electrically-heatedH. Hertzberg Tools or tool-sockets, Shank for tang- drivenG. H. and E. S. Gross Torpedo-launching tube, Submarine broad- sideC. A. Fallenius Tov gnnP. W. Cohrs
Tobacco-baruG. Kretzschmar
Tobacco-plug cutter
Tools or tool-sockets, Shank for tang-
Torpedo-launching tube, Submarine broad-
side
Traction-engineJ. M. Mittendorf
Toy gnn
Tray-support
Truck, Hand
Truck-wheel
Turbine
Turbine engine, Explosive gasJ. Brown
Turnstile
ism
Type-writer attachment
bined
Type-writing machineA. W. Smith
Type-writing machineH. H. Steele Type-writing machineB. C. Stickney
Type-writing machine (2 pats.)
D H Strothor
Type-writing machine
Type-writing machine E. B. Hess Type-writing machine E. B. Hess Type-writing machine W. E. Barnard
Type-writing machine
Type-writing machine
Type-writing machine H. Strother Type-writing machine E. B. Hess Type-writing machine W. E. Barnard Type-writing machine carriage - feeding mechanism W. W. Lasker Umbrella, Folding H. B. Anderson Umbrella rib and stretcher joint.
Type-writing machine H. Strother Type-writing machine E. R. Hess Type-writing machine W. E. Barnard Type-writing machine carriage - feeding mechanism W. W. Lasker Umbrella C. F. Burtou Umbrella, Folding H. B. Anderson Umbrella rib and stretcher joint W. H. Hartzell
Type-writing machine
Type-writing machine II. T. Foddrill Type-writing machine E. B. Hess Type-writing machine W. E. Barnard Type-writing machine carriage - feeding mechanism W. Lasker Umbrella C. F. Burtou Umbrella, Folding H. B. Anderson Umbrella rib and stretcher joint M. H. Hartzell Underwaist and corset, Combined H. E. Nickle Valve, Automatic flushing S. C. Laidley
Type-writing machine II. T. Foddrill Type-writing machine E. B. Hess Type-writing machine W. E. Barnard Type-writing machine carriage - feeding mechanism W. W. Lasker Imbrella C. F. Burton Umbrella, Folding H. B. Anderson Umbrella rib and stretcher joint M. H. Hartzell Underwaist and corset, Combined H. E. Nickle Valve, Automatic flushing S. C. Laidley Valve, Antomatic tushometer A. Dufty Valve, Engine- (2 pats.) L. Skinner
Type-writing machine H. T. Froddrill Type-writing machine E. B. Hess Type-writing machine W. E. Barnard Type-writing machine carriage - feeding mechanism W. W. Lasker Umbrella C. F. Burtou Umbrella, Folding H. B. Anderson Umbrella rib and stretcher joint M. H. Hartzell Underwaist and corset, Combined H. E. Nickle Valve, Automatic flushing S. C. Laidley Valve, Antomatic tlushometer A. Dufty Valve, Engine- (2 pats.) L. Skinner Valve-gear, Locomotive A. Jendrusik Valve-gear of internal-combustion engines.
Traction-wheel A. H. Meyer Transmission device, Safety A. M. Leoni Tray-support C. F. Booth Trnck. B. A. Ballinger Truck, Hand- F. Stebler Truck-wheel W. H. Clark Turbine J. C. Britcher Turbine J. C. Britcher Turbine W. G. Ross Turbine engine, Explosive gas- J. Brown Turnstile H. A. Gordon Type assembling and distributing mechanism H. C. Osborn Type-writer attachment L. Brown Type-writing and adding machine, Combined G. O. Degenet Type-writing machine W. W. Lasker Type-writing machine H. H. Steele Type-writing machine H. H. Steele Type-writing machine B. C. Stickney Type-writing machine B. C. Stickney Type-writing machine B. C. Stickney Type-writing machine E. B. Hess Type-writing machine E. B. Hess Type-writing machine G. B. C. Burtou Type-writing machine carviage - feeding mechanism W. W. Lasker Umbrella, Folding H. B. Anderson Umbrella rib and stretcher joint M. H. Hartzell Underwaist and corset, Combined H. E. Nickle Valve, Automatic flushometer A. Duffy Valve, Engine (2 pats.) L. Skinner Valve, Engine (2 pats.) L. Skinner Valve Pressura-regulating G. Hollmen F. W. Lanchester
Type-writing machine II. T. Foddrill Type-writing machine E. R. Hess Type-writing machine W. E. Barnard Type-writing machine W. E. Barnard Type-writing machine carriage - feeding mechanism W. W. Lasker Umbrella C. F. Burtou Umbrella, Folding H. B. Anderson Umbrella rib and stretcher joint M. H. Hartzell Underwaist and corset, Combined H. E. Nickle Valve, Automatic flushing S. C. Laidley Valve, Antomatic tlushometer A. Dufty Valve, Engine- (2 pats.) L. Skinner Valve-gear, Locomotive A. Jendrusik Valve-gear of internal-combustion engines F. W. Lanchester Valve, Pressnre-regulating G. Holmen Valve, Tank F. E. Charnoin
Type-writing machine II. T. Foddrill Type-writing machine E. B. Hess Type-writing machine W. E. Barnard Type-writing machine carriage - feeding mechanism W. W. Lasker Imbrella C. F. Burtou Umbrella, Folding H. B. Anderson Umbrella rib and stretcher joint M. H. Hartzell Underwaist and corset, Combined H. E. Nickle Valve, Automatic finshing S. C. Laidley Valve, Antomatic finshometer A. Dufty Valve, Engine- (2 pats.) L. Skinner Valve-gear, Locomotive A. Jendrusik Valve-gear of internal-combustion engines F. W. Lanchester Valve, Pressnre-regulating G. Holmen Valve, Tank F. B. Charroin Vapor-burner (2 pats.) II. C. Wright Vegetable-masher E. S. Savage
Type-writing machine H. Strother Type-writing machine E. B. Hess Type-writing machine W. E. Barnard Type-writing machine carriage - feeding mechanism W. W. Lasker Imbrella C. F. Burton Umbrella, Folding H. B. Anderson Umbrella, Folding M. H. Hartzell Underwaist and stretcher joint M. H. Hartzell Underwaist and corset, Combined H. E. Nickle Valve, Automatic flushing. S. C. Laidley Valve, Antomatic flushometer. A. Dufty Valve, Engine. (2 pats.) L. Skinner Valve-gear of internal-combustion engines F. W. Lanchester Valve, Pressnre-regulating G. Holmen Valve, Tank. F. E. Charroin Vapor-burner (2 pats.) H. C. Wright Vegetable-masher E. S. Savage
Valve, Pressnre-regulating, G. Holmen Valve, Tank- F. B. Charroin Vapor-burner (2 pats.) H. C. Wright Vegetable-masher E. S. Savage Vegetable scraper or peclet, E. W. Milhado Vehicle J. Jennings
Valve, Pressnre-regulating, G. Holmen Valve, Tank- F. B. Charroin Vapor-burner (2 pats.) H. C. Wright Vegetable-masher E. S. Savage Vegetable scraper or peclet, E. W. Milhado Vehicle J. Jennings
Valve, Pressnre-regulating, G. Holmen Valve, Tank- F. B. Charroin Vapor-burner (2 pats.) H. C. Wright Vegetable-masher E. S. Savage Vegetable scraper or peclet, E. W. Milhado Vehicle J. Jennings
Valve, Pressnre-regulating, G. Holmen Valve, Tank- F. B. Charroin Vapor-burner (2 pats.) H. C. Wright Vegetable-masher E. S. Savage Vegetable scraper or peclet, E. W. Milhado Vehicle J. Jennings
Valve, Pressnre-regulating, G. Holmen Valve, Tank-, F. B. Charroin Vapor-burner (2 pats.), H. C. Wright Vegetable-masher, E. S. Savage Vegetable scraper or peelev, E. W. Milhado Vehicle, J. Jennings Vehicle-door handle and lock, Combined, L. W. Gates Vehicle-wheel, H. W. Young Vehicle-wheel, J. H. Hardwick Vending machine, Liquid-, C. H. Curtis Ventilator, E. B. Freeman Ventilator and storm-shield, B. J. Crandall
Valve, Pressnre-regulating, G. Holmen Valve, Tank-, F. B. Charroin Vapor-burner (2 pats.), H. C. Wright Vegetable-masher, E. S. Savage Vegetable scraper or peelev, E. W. Milhado Vehicle, J. Jennings Vehicle-door handle and lock, Combined, L. W. Gates Vehicle-wheel, H. W. Young Vehicle-wheel, J. H. Hardwick Vending machine, Liquid-, C. H. Curtis Ventilator, E. B. Freeman Ventilator and storm-shield, B. J. Crandall
Valve, Pressnre-regulating, G. Holmen Valve, Tank-, F. B. Charroin Vapor-burner (2 pats.), H. C. Wright Vegetable-masher, E. S. Savage Vegetable scraper or peelev, E. W. Milhado Vehicle, J. Jennings Vehicle-door handle and lock, Combined, L. W. Gates Vehicle-wheel, H. W. Young Vehicle-wheel, J. H. Hardwick Vending machine, Liquid-, C. H. Curtis Ventilator, E. B. Freeman Ventilator and storm-shield, B. J. Crandall
Valve, Pressnre-regulating, G. Holmen Valve, Tank-, F. B. Charroin Vapor-burner (2 pats.), H. C. Wright Vegetable-masher, E. S. Savage Vegetable scraper or peelev, E. W. Milhado Vehicle, J. Jennings Vehicle-door handle and lock, Combined, L. W. Gates Vehicle-wheel, H. W. Young Vehicle-wheel, J. H. Hardwick Vending machine, Liquid-, C. H. Curtis Ventilator, E. B. Freeman Ventilator and storm-shield, B. J. Crandall
Valve, Pressnre-regulating, G. Holmen Valve, Tank-, F. B. Charroin Vapor-burner (2 pats.), H. C. Wright Vegetable-masher, E. S. Savage Vegetable scraper or peelev, E. W. Milhado Vehicle, J. Jennings Vehicle-door handle and lock, Combined, L. W. Gates Vehicle-wheel, H. W. Young Vehicle-wheel, J. H. Hardwick Vending machine, Liquid-, C. H. Curtis Ventilator, E. B. Freeman Ventilator and storm-shield, B. J. Crandall
Valve, Pressnre-regulating, G. Holmen Valve, Tank-, F. B. Charroin Vapor-burner (2 pats.), H. C. Wright Vegetable-masher, E. S. Savage Vegetable scraper or peelev, E. W. Milhado Vehicle, J. Jennings Vehicle-door handle and lock, Combined, L. W. Gates Vehicle-wheel, H. W. Young Vehicle-wheel, J. H. Hardwick Vending machine, Liquid-, C. H. Curtis Ventilator, E. B. Freeman Ventilator and storm-shield, B. J. Crandall
Valve, Pressnre-regulating, G. Holmen Valve, Tank-, F. B. Charroin Vapor-burner (2 pats.), H. C. Wright Vegetable-masher, E. S. Savage Vegetable scraper or peelev, E. W. Milhado Vehicle, J. Jennings Vehicle-door handle and lock, Combined, L. W. Gates Vehicle-wheel, H. W. Young Vehicle-wheel, J. H. Hardwick Vending machine, Liquid-, C. H. Curtis Ventilator, E. B. Freeman Ventilator and storm-shield, B. J. Crandall
Valve, Pressnre-regulating. G. Holmen Valve, Tank. F. B. Charroin Vapor burner (2 pats.) H. C. Wright Vegetable-masher E. S. Savage Vegetable scraper or peclev. E. W. Milhado Vehicle J. Jennings Vehicle-door handle and lock, Combined L. W. Gates Vehicle-wheel J. H. Hardwick Vending machine, Liquid C. fl. Curtis Ventilator and storm-shield. B. J. Crandall Vessel and other craft P. Maggio Vessel lid. Metallic A. Manser Wagon, Log W. P. Dunlap Wagon or truck bolster R. J. Woodward Washtub attachment (3 pats.) W. J. Minns Washtub attachment (3 pats.) W. J. Kibby Watchmen, Electrical system for the supervision of A. Goldstein Water-closet hood-vent M. L. Gumprecht W. L. Gumprecht
Valve, Pressnre-regulating. G. Holmen Valve, Tank. F. B. Charroin Vapor burner (2 pats.) H. C. Wright Vegetable-masher E. S. Savage Vegetable scraper or peclev. E. W. Milhado Vehicle J. Jennings Vehicle-door handle and lock, Combined L. W. Gates Vehicle-wheel J. H. Hardwick Vending machine, Liquid C. fl. Curtis Ventilator and storm-shield. B. J. Crandall Vessel and other craft P. Maggio Vessel lid. Metallic A. Manser Wagon, Log W. P. Dunlap Wagon or truck bolster R. J. Woodward Washtub attachment (3 pats.) W. J. Minns Washtub attachment (3 pats.) W. J. Kibby Watchmen, Electrical system for the supervision of A. Goldstein Water-closet hood-vent M. L. Gumprecht W. L. Gumprecht
Valve, Pressnre-regulating. G. Holmen Valve, Tank. F. B. Charroin Vapor burner (2 pats.) H. C. Wright Vegetable-masher E. S. Savage Vegetable scraper or peclev. E. W. Milhado Vehicle J. Jennings Vehicle-door handle and lock, Combined L. W. Gates Vehicle-wheel J. H. Hardwick Vending machine, Liquid C. fl. Curtis Ventilator and storm-shield. B. J. Crandall Vessel and other craft P. Maggio Vessel lid. Metallic A. Manser Wagon, Log W. P. Dunlap Wagon or truck bolster R. J. Woodward Washtub attachment (3 pats.) W. J. Minns Washtub attachment (3 pats.) W. J. Kibby Watchmen, Electrical system for the supervision of A. Goldstein Water-closet hood-vent M. L. Gumprecht W. L. Gumprecht
Valve, Pressnre-regulating. G. Holmen Valve, Tank. F. B. Charroin Vapor burner (2 pats.) H. C. Wright Vegetable-masher E. S. Savage Vegetable scraper or peclev. E. W. Milhado Vehicle J. Jennings Vehicle-door handle and lock, Combined L. W. Gates Vehicle-wheel J. H. Hardwick Vending machine, Liquid C. fl. Curtis Ventilator and storm-shield. B. J. Crandall Vessel and other craft P. Maggio Vessel lid. Metallic A. Manser Wagon, Log W. P. Dunlap Wagon or truck bolster R. J. Woodward Washtub attachment (3 pats.) W. J. Minns Washtub attachment (3 pats.) W. J. Kibby Watchmen, Electrical system for the supervision of A. Goldstein Water-closet hood-vent M. L. Gumprecht W. L. Gumprecht
Valve. Pressnre-regulating. G. Holmen Valve. Tank. F. B. Charroin Vapor burner (2 pats.) H. C. Wright Vegetable-masher. E. S. Savage Vegetable scraper or peclev. E. W. Milhado Vehicle. J. Jennings Vehicle-door handle and lock, Combined. L. W. Gates Vehicle-wheel. H. W. Young Vehicle-wheel. H. W. Young Vehicle-wheel. H. W. Young Vehicle-wheel. J. H. Hardwick Vending machine, Liquid. C. H. Curtis Ventilator and storm-shield. B. J. Crandall Vessel lid. Metallić. A. Manser Wagon, Log. W. P. Dunlap Wagon or truck bolster. R. J. Woodward Washtub attachment (3 pats.). W. J. Minns Washtub attachment (3 pats.). W. J. Kibby Watchmen, Electrical system for the supervision of A. Goldstein Water-meter disks, Manufacture of. W. L. Gumprecht Water-wheel. Impact. J. Kineaid Weighing device. W. B. Rowland et al. Weighing machine. Liquid. R. W. Ensley Well-drilling machine. J. W. Jennings Well-drilling machine. J. C. Rondebush Well-ofbe lifter. J. C. Rondebush
Valve, Pressnre-regulating. G. Holmen Valve, Tank. F. B. Charroin Vapor-burner (2 pats.) H. C. Wright Vegetable-masher E. S. Savage Vegetable scraper or peelev. E. W. Milhado Vehicle J. Jennings Vehicle-door handle and lock, Combined L. W. Gates Vehicle-wheel H. W. Young Vehicle-wheel J. H. Hardwick Vending machine, Liquid C. fl. Curtis Ventilator El. B. Freeman Ventilator and storm-shield. B. J. Crandall Vessel and other craft P. Maggio Vessel lid. Metallic A. Manser Wagon, Log W. P. Dunlap Wagon or truck bolster R. J. Woodward Washtub attachment (3 pats.) W. J. Minns Washtub attachment (3 pats.) W. J. Kibby Watchmen, Electrical system for the supervision of A. Goldstein Water-meter disks, Manufacture of W. L. Gumprecht Water-wheel J. R. De Remer Water-wheel J. R. De Remer Water-wheel J. R. Rowland et al. Weighing machine, Liquid. R. W. Ensley Welding, Electrical N. Macneale Well discharger and cleanser A. S. Chivers Well-drilling machine J. W. Jennings Well-pipe lifter J. C. Rondebush
Valve, Pressnre-regulating. G. Holmen Valve, Tank. F. B. Charroin Vapor-burner (2 pats.) H. C. Wright Vegetable-masher E. S. Savage Vegetable scraper or peelev. E. W. Milhado Vehicle J. Jennings Vehicle-door handle and lock, Combined L. W. Gates Vehicle-wheel H. W. Young Vehicle-wheel J. H. Hardwick Vending machine, Liquid C. fl. Curtis Ventilator El. B. Freeman Ventilator and storm-shield. B. J. Crandall Vessel and other craft P. Maggio Vessel lid. Metallic A. Manser Wagon, Log W. P. Dunlap Wagon or truck bolster R. J. Woodward Washtub attachment (3 pats.) W. J. Minns Washtub attachment (3 pats.) W. J. Kibby Watchmen, Electrical system for the supervision of A. Goldstein Water-meter disks, Manufacture of W. L. Gumprecht Water-wheel J. R. De Remer Water-wheel J. R. De Remer Water-wheel J. R. Rowland et al. Weighing machine, Liquid. R. W. Ensley Welding, Electrical N. Macneale Well discharger and cleanser A. S. Chivers Well-drilling machine J. W. Jennings Well-pipe lifter J. C. Rondebush
Valve, Pressnre-regulating. G. Holmen Valve, Tank. F. B. Charroin Vapor-burner (2 pats.) H. C. Wright Vegetable-masher E. S. Savage Vegetable scraper or peelev. E. W. Milhado Vehicle J. Jennings Vehicle-door handle and lock, Combined L. W. Gates Vehicle-wheel H. W. Young Vehicle-wheel J. H. Hardwick Vending machine, Liquid C. fl. Curtis Ventilator El. B. Freeman Ventilator and storm-shield. B. J. Crandall Vessel and other craft P. Maggio Vessel lid. Metallic A. Manser Wagon, Log W. P. Dunlap Wagon or truck bolster R. J. Woodward Washtub attachment (3 pats.) W. J. Minns Washtub attachment (3 pats.) W. J. Kibby Watchmen, Electrical system for the supervision of A. Goldstein Water-meter disks, Manufacture of W. L. Gumprecht Water-wheel J. R. De Remer Water-wheel J. R. De Remer Water-wheel J. R. Rowland et al. Weighing machine, Liquid. R. W. Ensley Welding, Electrical N. Macneale Well discharger and cleanser A. S. Chivers Well-drilling machine J. W. Jennings Well-pipe lifter J. C. Rondebush
Valve, Pressnre-regulating. G. Holmen Valve, Tank. F. B. Charroin Vapor-burner (2 pats.) H. C. Wright Vegetable-masher E. S. Savage Vegetable scraper or peelev. E. W. Milhado Vehicle J. Jennings Vehicle-door handle and lock, Combined L. W. Gates Vehicle-wheel H. W. Young Vehicle-wheel J. H. Hardwick Vending machine, Liquid C. fl. Curtis Ventilator El. B. Freeman Ventilator and storm-shield. B. J. Crandall Vessel and other craft P. Maggio Vessel lid. Metallic A. Manser Wagon, Log W. P. Dunlap Wagon or truck bolster R. J. Woodward Washtub attachment (3 pats.) W. J. Minns Washtub attachment (3 pats.) W. J. Kibby Watchmen, Electrical system for the supervision of A. Goldstein Water-meter disks, Manufacture of W. L. Gumprecht Water-wheel J. R. De Remer Water-wheel J. R. De Remer Water-wheel J. R. Rowland et al. Weighing machine, Liquid. R. W. Ensley Welding, Electrical N. Macneale Well discharger and cleanser A. S. Chivers Well-drilling machine J. W. Jennings Well-pipe lifter J. C. Rondebush
Valve, Pressnre-regulating. G. Holmen Valve, Tank. F. B. Charroin Vapor-burner (2 pats.) H. C. Wright Vegetable-masher E. S. Savage Vegetable scraper or peelev. E. W. Milhado Vehicle J. Jennings Vehicle-door handle and lock, Combined L. W. Gates Vehicle-wheel H. W. Young Vehicle-wheel J. H. Hardwick Vending machine, Liquid C. fl. Curtis Ventilator El. B. Freeman Ventilator and storm-shield. B. J. Crandall Vessel and other craft P. Maggio Vessel lid. Metallic A. Manser Wagon, Log W. P. Dunlap Wagon or truck bolster R. J. Woodward Washtub attachment (3 pats.) W. J. Minns Washtub attachment (3 pats.) W. J. Kibby Watchmen, Electrical system for the supervision of A. Goldstein Water-meter disks, Manufacture of W. L. Gumprecht Water-wheel J. R. De Remer Water-wheel J. R. De Remer Water-wheel J. R. Rowland et al. Weighing machine, Liquid. R. W. Ensley Welding, Electrical N. Macneale Well discharger and cleanser A. S. Chivers Well-drilling machine J. W. Jennings Well-pipe lifter J. C. Rondebush
Valve, Pressnre-regulating. G. Holmen Valve, Tank. F. B. Charroin Vapor-burner (2 pats.) H. C. Wright Vegetable-masher E. S. Savage Vegetable scraper or peclev. E. W. Milhado Vehicle J. Jennings Vehicle-door handle and lock, Combined L. W. Gates Vehicle-wheel J. H. W. Young Vehicle-wheel J. H. Hardwick Vending machine, Liquid. C. fl. Curtis Ventilator and storm-shield B. J. Crandall Vessel and other craft P. Maggio Vessel lid, Metallić A. Manser Wagon, Log W. P. Dunlap Wagon or truck bolster R. J. Woodward Washtub attachment (3 pats.) W. J. Minns Washtub attachment (3 pats.) W. J. Kibby Watchmen, Electrical system for the supervision of A. Goldstein Water-meter disks, Manufacture of W. L. Gumprecht Water-meter disks, Manufacture of W. L. Gumprecht Water-wheel J. R. De Remer J. R.
Valve, Pressnre-regulating. G. Holmen Valve, Tank. F. B. Charroin Vapor-burner (2 pats.) H. C. Wright Vegetable-masher E. S. Savage Vegetable scraper or peclev. E. W. Milhado Vehicle J. Jennings Vehicle-door handle and lock, Combined L. W. Gates Vehicle-wheel J. H. W. Young Vehicle-wheel J. H. Hardwick Vending machine, Liquid C. fl. Curtis Ventilator and storm-shield B. J. Crandall Vessel and other craft P. Maggio Vessel lid. Metallié A. Manser Wagon, Log W. P. Dunlap Wagon or truck bolster R. J. Woodward Washtub attachment (3 pats.) W. J. Minns Washtub attachment (3 pats.) W. J. Kibby Watchmen, Electrical system for the supervision of A. Goldstein Water-meter disks, Manufacture of W. L. Gumprecht Water-meter disks, Manufacture of W. L. Gumprecht Water-wheel J. R. De Remer M. J. R. De Remer M

MECHANICAL PATENTS. .

Accounts, Pocket-recorder for expense....
A. W. Hayes
Addressing-machine....E. G. Ernst
Advertising device...F. A. Stadler
Aerial propeller....S. Lawrence

Acroplane and motor-boat, Combined,, C. Harzmeier Mir-forcing apparatus. C. Harzmeier Air-forcing apparatus. C. F. Baker Air-forcing apparatus. C. F. Baker Air-forcing apparatus. W. F. Mangels Air-lift, W. C. Fickle Altomobile craiking usens. J. B. Castle Automobile craiking usens. J. B. Castle Automobile craiking usens. J. B. Castle Automobile cherchgewise. G. R. Farkey of al Automobile beyendeder. J. Parkinson Automobile wheel J. H. Andrews et al. Bath-eabinet. J. P. Miller Automobile-wheel J. H. Andrews et al. Bath-eabinet. J. P. Miller Raft. Trolling. G. F. Immell Earl-Raft Raft Trolling. G. F. Immell Earl-Raft Raft Trolling. G. F. Immell Earl-Raft Raft Parket Raft Pa	
Automizer J. R. Ballentine Antomatic switch J. V. C. Pickle Automobile cranking means J. J. B. Castle Automobile cranking means J. J. B. Castle Automobile steering. Wheel J. J. Slepicka Automobile steering. Wheel J. J. Slepicka Automobile steering. Wheel J. J. Slepicka Automobile steering. Wheel J. J. Parkinson Automobile wilcel J. T. N. Hayden Automobile wilcel J. H. Andrews et al. Eastle Steering and Automobile wilcel J. H. Andrews et al. Eastle Steering and Automobile wilcel J. H. Lu Fave Bartery wall for cleetric storage. F. O. Spies Batteries, Pilotcell for cleetric storage. R. Macrae Bartery-vault. F. H. T. Potter Basket J. H. Lu Fave Bartery-vault. F. H. T. Potter Beading-cementer J. T. Quinn Bearing, Ball- H. Hess Bearing, Roller J. B. Badger Bearing with resilient eage, Roller. Search and Steering with resilient eage, Roller. Search Steering with resilient eage, Roller. Search Steering and Steering with resilient eage, Roller Steel Sofa. G. G. De Moss Bed. Davenport. B. L. V. Uhlenburth Berth. Sleeping-car C. F. Rydberg Binder. Loose-leaf, C. F. Rydberg Binder. Loose-l	AeroplaneE. M. Yates
Automizer J. R. Ballentine Antomatic switch J. V. C. Pickle Automobile cranking means J. J. B. Castle Automobile cranking means J. J. B. Castle Automobile steering. Wheel J. J. Slepicka Automobile steering. Wheel J. J. Slepicka Automobile steering. Wheel J. J. Slepicka Automobile steering. Wheel J. J. Parkinson Automobile wilcel J. T. N. Hayden Automobile wilcel J. H. Andrews et al. Eastle Steering and Automobile wilcel J. H. Andrews et al. Eastle Steering and Automobile wilcel J. H. Lu Fave Bartery wall for cleetric storage. F. O. Spies Batteries, Pilotcell for cleetric storage. R. Macrae Bartery-vault. F. H. T. Potter Basket J. H. Lu Fave Bartery-vault. F. H. T. Potter Beading-cementer J. T. Quinn Bearing, Ball- H. Hess Bearing, Roller J. B. Badger Bearing with resilient eage, Roller. Search and Steering with resilient eage, Roller. Search Steering with resilient eage, Roller. Search Steering and Steering with resilient eage, Roller Steel Sofa. G. G. De Moss Bed. Davenport. B. L. V. Uhlenburth Berth. Sleeping-car C. F. Rydberg Binder. Loose-leaf, C. F. Rydberg Binder. Loose-l	
Automizer J. R. Ballentine Antomatic switch J. V. C. Pickle Automobile cranking means J. J. B. Castle Automobile cranking means J. J. B. Castle Automobile steering. Wheel J. J. Slepicka Automobile steering. Wheel J. J. Slepicka Automobile steering. Wheel J. J. Slepicka Automobile steering. Wheel J. J. Parkinson Automobile wilcel J. T. N. Hayden Automobile wilcel J. H. Andrews et al. Eastle Steering and Automobile wilcel J. H. Andrews et al. Eastle Steering and Automobile wilcel J. H. Lu Fave Bartery wall for cleetric storage. F. O. Spies Batteries, Pilotcell for cleetric storage. R. Macrae Bartery-vault. F. H. T. Potter Basket J. H. Lu Fave Bartery-vault. F. H. T. Potter Beading-cementer J. T. Quinn Bearing, Ball- H. Hess Bearing, Roller J. B. Badger Bearing with resilient eage, Roller. Search and Steering with resilient eage, Roller. Search Steering with resilient eage, Roller. Search Steering and Steering with resilient eage, Roller Steel Sofa. G. G. De Moss Bed. Davenport. B. L. V. Uhlenburth Berth. Sleeping-car C. F. Rydberg Binder. Loose-leaf, C. F. Rydberg Binder. Loose-l	Air-forcing apparatus
Automizer J. R. Ballentine Antomatic switch J. V. C. Pickle Automobile cranking means J. J. B. Castle Automobile cranking means J. J. B. Castle Automobile steering. Wheel J. J. Slepicka Automobile steering. Wheel J. J. Slepicka Automobile steering. Wheel J. J. Slepicka Automobile steering. Wheel J. J. Parkinson Automobile wilcel J. T. N. Hayden Automobile wilcel J. H. Andrews et al. Eastle Steering and Automobile wilcel J. H. Andrews et al. Eastle Steering and Automobile wilcel J. H. Lu Fave Bartery wall for cleetric storage. F. O. Spies Batteries, Pilotcell for cleetric storage. R. Macrae Bartery-vault. F. H. T. Potter Basket J. H. Lu Fave Bartery-vault. F. H. T. Potter Beading-cementer J. T. Quinn Bearing, Ball- H. Hess Bearing, Roller J. B. Badger Bearing with resilient eage, Roller. Search and Steering with resilient eage, Roller. Search Steering with resilient eage, Roller. Search Steering and Steering with resilient eage, Roller Steel Sofa. G. G. De Moss Bed. Davenport. B. L. V. Uhlenburth Berth. Sleeping-car C. F. Rydberg Binder. Loose-leaf, C. F. Rydberg Binder. Loose-l	Airship gas-envelopJ. C. Schleicher Amnsement apparatusW. F. Maugels
Bed. C. S. Loekwood Bed. C. S. Loekwood Bed. Davenport. J. G. G. De Moss Bed. Sofa- L. G. Justh Bed. Sofa- L. G. L. W. Uhlenhuth Bedstreaks, Short rall for. H. De Boer Belt-fastener L. E. L. V. Uhlenhuth Berth. Steeping-car C. C. F. Rydberg Binder. Loose-leaf. E. J. Pottinger Blind-bolder, Window- J. J. Leiser Bind-bolder, Window- J. J. Leiser Bords from pieces, Machine for building up. J. Kunz Bottle-capping machine. H. A. Allwardt Bottle-cooler, Inverted. A. L. Boggs Bottle-capping machine. A. Schneid's Bottle-daybrine. A. Schneid's Bottle-fasket. Water. C. Singer Box-lid supporter. W. B. Speice Brake-beam. W. E. Fowler, Jr. Brake-beam. M. W. E. Fowler, Jr. Brake-beam. M. W. E. Fowler, Jr. Brake-beam. M. W. E. Fowler, Jr. Brake-beam. Adjustable. E. A. Le Bean Brake-beam. Adjustable. E. A. Le Bean Brake-head. Selection of the recovery Brush. A. H. Ackerman Bucket. T. M. Wakefield Building-block. W. W. D. Myers Burglary safeguarding apparatus. E. Maynard Burner. F. C. Chadborn Button, Thread. H. Laula Buttonhole-piece. C. S. Smith By-products, Apparatus for the recovery of. C. P. M. Hamilin Cabinet, Cup-receiving. O. T. Hanson Cabinet, Druggist's label- "H. W. Broenmeistek Cake-mixer. therest. J. H. P. Farrar et al. Camera attachment. A. R. E. Swoyer Cane entiting and crushing machine, Suzar- of. Car-coupling. F. O. Jones Car door, Grain. C. E. Sievert Car-coupling. F. O. Jones Car door, Grain. C. E. Sievert Car-coupling. F. O. Jones Car door, Grain. C. E. Sievert Car-coupling. F. O. Jones Car door, Grain. C. E. Sievert Concete nelway-tie. J. J. R. Ferrer Coke, Hot man Suzar- Contents of matter. F. M. E. Modgson Converse, Electically-heated. C. E. Terwilliger Conversing-machine. W. F. Uploff Cars and other road-carriages. Seat and body of motor- Car and C. J. A. Griffith Concret englw	Antiskid-chall for antonoblie-tiresO. Falkenwalde
Bed. C. S. Loekwood Bed. C. S. Loekwood Bed. Davenport. J. G. G. De Moss Bed. Sofa- L. G. Justh Bed. Sofa- L. G. L. W. Uhlenhuth Bedstreaks, Short rall for. H. De Boer Belt-fastener L. E. L. V. Uhlenhuth Berth. Steeping-car C. C. F. Rydberg Binder. Loose-leaf. E. J. Pottinger Blind-bolder, Window- J. J. Leiser Bind-bolder, Window- J. J. Leiser Bords from pieces, Machine for building up. J. Kunz Bottle-capping machine. H. A. Allwardt Bottle-cooler, Inverted. A. L. Boggs Bottle-capping machine. A. Schneid's Bottle-daybrine. A. Schneid's Bottle-fasket. Water. C. Singer Box-lid supporter. W. B. Speice Brake-beam. W. E. Fowler, Jr. Brake-beam. M. W. E. Fowler, Jr. Brake-beam. M. W. E. Fowler, Jr. Brake-beam. M. W. E. Fowler, Jr. Brake-beam. Adjustable. E. A. Le Bean Brake-beam. Adjustable. E. A. Le Bean Brake-head. Selection of the recovery Brush. A. H. Ackerman Bucket. T. M. Wakefield Building-block. W. W. D. Myers Burglary safeguarding apparatus. E. Maynard Burner. F. C. Chadborn Button, Thread. H. Laula Buttonhole-piece. C. S. Smith By-products, Apparatus for the recovery of. C. P. M. Hamilin Cabinet, Cup-receiving. O. T. Hanson Cabinet, Druggist's label- "H. W. Broenmeistek Cake-mixer. therest. J. H. P. Farrar et al. Camera attachment. A. R. E. Swoyer Cane entiting and crushing machine, Suzar- of. Car-coupling. F. O. Jones Car door, Grain. C. E. Sievert Car-coupling. F. O. Jones Car door, Grain. C. E. Sievert Car-coupling. F. O. Jones Car door, Grain. C. E. Sievert Car-coupling. F. O. Jones Car door, Grain. C. E. Sievert Concete nelway-tie. J. J. R. Ferrer Coke, Hot man Suzar- Contents of matter. F. M. E. Modgson Converse, Electically-heated. C. E. Terwilliger Conversing-machine. W. F. Uploff Cars and other road-carriages. Seat and body of motor- Car and C. J. A. Griffith Concret englw	Atomizer
Bed. C. S. Loekwood Bed. C. S. Loekwood Bed. Davenport. J. G. G. De Moss Bed. Sofa- L. G. Justh Bed. Sofa- L. G. L. W. Uhlenhuth Bedstreaks, Short rall for. H. De Boer Belt-fastener L. E. L. V. Uhlenhuth Berth. Steeping-car C. C. F. Rydberg Binder. Loose-leaf. E. J. Pottinger Blind-bolder, Window- J. J. Leiser Bind-bolder, Window- J. J. Leiser Bords from pieces, Machine for building up. J. Kunz Bottle-capping machine. H. A. Allwardt Bottle-cooler, Inverted. A. L. Boggs Bottle-capping machine. A. Schneid's Bottle-daybrine. A. Schneid's Bottle-fasket. Water. C. Singer Box-lid supporter. W. B. Speice Brake-beam. W. E. Fowler, Jr. Brake-beam. M. W. E. Fowler, Jr. Brake-beam. M. W. E. Fowler, Jr. Brake-beam. M. W. E. Fowler, Jr. Brake-beam. Adjustable. E. A. Le Bean Brake-beam. Adjustable. E. A. Le Bean Brake-head. Selection of the recovery Brush. A. H. Ackerman Bucket. T. M. Wakefield Building-block. W. W. D. Myers Burglary safeguarding apparatus. E. Maynard Burner. F. C. Chadborn Button, Thread. H. Laula Buttonhole-piece. C. S. Smith By-products, Apparatus for the recovery of. C. P. M. Hamilin Cabinet, Cup-receiving. O. T. Hanson Cabinet, Druggist's label- "H. W. Broenmeistek Cake-mixer. therest. J. H. P. Farrar et al. Camera attachment. A. R. E. Swoyer Cane entiting and crushing machine, Suzar- of. Car-coupling. F. O. Jones Car door, Grain. C. E. Sievert Car-coupling. F. O. Jones Car door, Grain. C. E. Sievert Car-coupling. F. O. Jones Car door, Grain. C. E. Sievert Car-coupling. F. O. Jones Car door, Grain. C. E. Sievert Concete nelway-tie. J. J. R. Ferrer Coke, Hot man Suzar- Contents of matter. F. M. E. Modgson Converse, Electically-heated. C. E. Terwilliger Conversing-machine. W. F. Uploff Cars and other road-carriages. Seat and body of motor- Car and C. J. A. Griffith Concret englw	Automobile cranking meansJ, B. Castle Automobile-lockC. R. Parker et al.
Bed. C. S. Loekwood Bed. C. S. Loekwood Bed. Davenport. J. G. G. De Moss Bed. Sofa- L. G. Justh Bed. Sofa- L. G. L. W. Uhlenhuth Bedstreaks, Short rall for. H. De Boer Belt-fastener L. E. L. V. Uhlenhuth Berth. Steeping-car C. C. F. Rydberg Binder. Loose-leaf. E. J. Pottinger Blind-bolder, Window- J. J. Leiser Bind-bolder, Window- J. J. Leiser Bords from pieces, Machine for building up. J. Kunz Bottle-capping machine. H. A. Allwardt Bottle-cooler, Inverted. A. L. Boggs Bottle-capping machine. A. Schneid's Bottle-daybrine. A. Schneid's Bottle-fasket. Water. C. Singer Box-lid supporter. W. B. Speice Brake-beam. W. E. Fowler, Jr. Brake-beam. M. W. E. Fowler, Jr. Brake-beam. M. W. E. Fowler, Jr. Brake-beam. M. W. E. Fowler, Jr. Brake-beam. Adjustable. E. A. Le Bean Brake-beam. Adjustable. E. A. Le Bean Brake-head. Selection of the recovery Brush. A. H. Ackerman Bucket. T. M. Wakefield Building-block. W. W. D. Myers Burglary safeguarding apparatus. E. Maynard Burner. F. C. Chadborn Button, Thread. H. Laula Buttonhole-piece. C. S. Smith By-products, Apparatus for the recovery of. C. P. M. Hamilin Cabinet, Cup-receiving. O. T. Hanson Cabinet, Druggist's label- "H. W. Broenmeistek Cake-mixer. therest. J. H. P. Farrar et al. Camera attachment. A. R. E. Swoyer Cane entiting and crushing machine, Suzar- of. Car-coupling. F. O. Jones Car door, Grain. C. E. Sievert Car-coupling. F. O. Jones Car door, Grain. C. E. Sievert Car-coupling. F. O. Jones Car door, Grain. C. E. Sievert Car-coupling. F. O. Jones Car door, Grain. C. E. Sievert Concete nelway-tie. J. J. R. Ferrer Coke, Hot man Suzar- Contents of matter. F. M. E. Modgson Converse, Electically-heated. C. E. Terwilliger Conversing-machine. W. F. Uploff Cars and other road-carriages. Seat and body of motor- Car and C. J. A. Griffith Concret englw	Antomobile steering-wheelJ. J. Slepicka Automobile top-holderJ. Parkinson
Bed. C. S. Loekwood Bed. C. S. Loekwood Bed. Davenport. J. G. G. De Moss Bed. Sofa- L. G. Justh Bed. Sofa- L. G. L. W. Uhlenhuth Bedstreaks, Short rall for. H. De Boer Belt-fastener L. E. L. V. Uhlenhuth Berth. Steeping-car C. C. F. Rydberg Binder. Loose-leaf. E. J. Pottinger Blind-bolder, Window- J. J. Leiser Bind-bolder, Window- J. J. Leiser Bords from pieces, Machine for building up. J. Kunz Bottle-capping machine. H. A. Allwardt Bottle-cooler, Inverted. A. L. Boggs Bottle-capping machine. A. Schneid's Bottle-daybrine. A. Schneid's Bottle-fasket. Water. C. Singer Box-lid supporter. W. B. Speice Brake-beam. W. E. Fowler, Jr. Brake-beam. M. W. E. Fowler, Jr. Brake-beam. M. W. E. Fowler, Jr. Brake-beam. M. W. E. Fowler, Jr. Brake-beam. Adjustable. E. A. Le Bean Brake-beam. Adjustable. E. A. Le Bean Brake-head. Selection of the recovery Brush. A. H. Ackerman Bucket. T. M. Wakefield Building-block. W. W. D. Myers Burglary safeguarding apparatus. E. Maynard Burner. F. C. Chadborn Button, Thread. H. Laula Buttonhole-piece. C. S. Smith By-products, Apparatus for the recovery of. C. P. M. Hamilin Cabinet, Cup-receiving. O. T. Hanson Cabinet, Druggist's label- "H. W. Broenmeistek Cake-mixer. therest. J. H. P. Farrar et al. Camera attachment. A. R. E. Swoyer Cane entiting and crushing machine, Suzar- of. Car-coupling. F. O. Jones Car door, Grain. C. E. Sievert Car-coupling. F. O. Jones Car door, Grain. C. E. Sievert Car-coupling. F. O. Jones Car door, Grain. C. E. Sievert Car-coupling. F. O. Jones Car door, Grain. C. E. Sievert Concete nelway-tie. J. J. R. Ferrer Coke, Hot man Suzar- Contents of matter. F. M. E. Modgson Converse, Electically-heated. C. E. Terwilliger Conversing-machine. W. F. Uploff Cars and other road-carriages. Seat and body of motor- Car and C. J. A. Griffith Concret englw	Automobile-wheelT. N. Hayden Automobile-wheelJ. H. Andrews et al.
Bed. C. S. Loekwood Bed. C. S. Loekwood Bed. Davenport. J. G. G. De Moss Bed. Sofa- L. G. Justh Bed. Sofa- L. G. L. W. Uhlenhuth Bedstreaks, Short rall for. H. De Boer Belt-fastener L. E. L. V. Uhlenhuth Berth. Steeping-car C. C. F. Rydberg Binder. Loose-leaf. E. J. Pottinger Blind-bolder, Window- J. J. Leiser Bind-bolder, Window- J. J. Leiser Bords from pieces, Machine for building up. J. Kunz Bottle-capping machine. H. A. Allwardt Bottle-cooler, Inverted. A. L. Boggs Bottle-capping machine. A. Schneid's Bottle-daybrine. A. Schneid's Bottle-fasket. Water. C. Singer Box-lid supporter. W. B. Speice Brake-beam. W. E. Fowler, Jr. Brake-beam. M. W. E. Fowler, Jr. Brake-beam. M. W. E. Fowler, Jr. Brake-beam. M. W. E. Fowler, Jr. Brake-beam. Adjustable. E. A. Le Bean Brake-beam. Adjustable. E. A. Le Bean Brake-head. Selection of the recovery Brush. A. H. Ackerman Bucket. T. M. Wakefield Building-block. W. W. D. Myers Burglary safeguarding apparatus. E. Maynard Burner. F. C. Chadborn Button, Thread. H. Laula Buttonhole-piece. C. S. Smith By-products, Apparatus for the recovery of. C. P. M. Hamilin Cabinet, Cup-receiving. O. T. Hanson Cabinet, Druggist's label- "H. W. Broenmeistek Cake-mixer. therest. J. H. P. Farrar et al. Camera attachment. A. R. E. Swoyer Cane entiting and crushing machine, Suzar- of. Car-coupling. F. O. Jones Car door, Grain. C. E. Sievert Car-coupling. F. O. Jones Car door, Grain. C. E. Sievert Car-coupling. F. O. Jones Car door, Grain. C. E. Sievert Car-coupling. F. O. Jones Car door, Grain. C. E. Sievert Concete nelway-tie. J. J. R. Ferrer Coke, Hot man Suzar- Contents of matter. F. M. E. Modgson Converse, Electically-heated. C. E. Terwilliger Conversing-machine. W. F. Uploff Cars and other road-carriages. Seat and body of motor- Car and C. J. A. Griffith Concret englw	Bath-cabillet
Bed. C. S. Loekwood Bed. C. S. Loekwood Bed. Davenport. J. G. G. De Moss Bed. Sofa- L. G. Justh Bed. Sofa- L. G. L. W. Uhlenhuth Bedstreaks, Short rall for. H. De Boer Belt-fastener L. E. L. V. Uhlenhuth Berth. Steeping-car C. C. F. Rydberg Binder. Loose-leaf. E. J. Pottinger Blind-bolder, Window- J. J. Leiser Bind-bolder, Window- J. J. Leiser Bords from pieces, Machine for building up. J. Kunz Bottle-capping machine. H. A. Allwardt Bottle-cooler, Inverted. A. L. Boggs Bottle-capping machine. A. Schneid's Bottle-daybrine. A. Schneid's Bottle-fasket. Water. C. Singer Box-lid supporter. W. B. Speice Brake-beam. W. E. Fowler, Jr. Brake-beam. M. W. E. Fowler, Jr. Brake-beam. M. W. E. Fowler, Jr. Brake-beam. M. W. E. Fowler, Jr. Brake-beam. Adjustable. E. A. Le Bean Brake-beam. Adjustable. E. A. Le Bean Brake-head. Selection of the recovery Brush. A. H. Ackerman Bucket. T. M. Wakefield Building-block. W. W. D. Myers Burglary safeguarding apparatus. E. Maynard Burner. F. C. Chadborn Button, Thread. H. Laula Buttonhole-piece. C. S. Smith By-products, Apparatus for the recovery of. C. P. M. Hamilin Cabinet, Cup-receiving. O. T. Hanson Cabinet, Druggist's label- "H. W. Broenmeistek Cake-mixer. therest. J. H. P. Farrar et al. Camera attachment. A. R. E. Swoyer Cane entiting and crushing machine, Suzar- of. Car-coupling. F. O. Jones Car door, Grain. C. E. Sievert Car-coupling. F. O. Jones Car door, Grain. C. E. Sievert Car-coupling. F. O. Jones Car door, Grain. C. E. Sievert Car-coupling. F. O. Jones Car door, Grain. C. E. Sievert Concete nelway-tie. J. J. R. Ferrer Coke, Hot man Suzar- Contents of matter. F. M. E. Modgson Converse, Electically-heated. C. E. Terwilliger Conversing-machine. W. F. Uploff Cars and other road-carriages. Seat and body of motor- Car and C. J. A. Griffith Concret englw	Basket F. O. Spies Butteries, Pilot-cell for electric storage
Bed. C. S. Loekwood Bed. C. S. Loekwood Bed. Davenport. J. G. G. De Moss Bed. Sofa- L. G. Justh Bed. Sofa- L. G. L. W. Uhlenhuth Bedstreaks, Short rall for. H. De Boer Belt-fastener L. E. L. V. Uhlenhuth Berth. Steeping-car C. C. F. Rydberg Binder. Loose-leaf. E. J. Pottinger Blind-bolder, Window- J. J. Leiser Bind-bolder, Window- J. J. Leiser Bords from pieces, Machine for building up. J. Kunz Bottle-capping machine. H. A. Allwardt Bottle-cooler, Inverted. A. L. Boggs Bottle-capping machine. A. Schneid's Bottle-daybrine. A. Schneid's Bottle-fasket. Water. C. Singer Box-lid supporter. W. B. Speice Brake-beam. W. E. Fowler, Jr. Brake-beam. M. W. E. Fowler, Jr. Brake-beam. M. W. E. Fowler, Jr. Brake-beam. M. W. E. Fowler, Jr. Brake-beam. Adjustable. E. A. Le Bean Brake-beam. Adjustable. E. A. Le Bean Brake-head. Selection of the recovery Brush. A. H. Ackerman Bucket. T. M. Wakefield Building-block. W. W. D. Myers Burglary safeguarding apparatus. E. Maynard Burner. F. C. Chadborn Button, Thread. H. Laula Buttonhole-piece. C. S. Smith By-products, Apparatus for the recovery of. C. P. M. Hamilin Cabinet, Cup-receiving. O. T. Hanson Cabinet, Druggist's label- "H. W. Broenmeistek Cake-mixer. therest. J. H. P. Farrar et al. Camera attachment. A. R. E. Swoyer Cane entiting and crushing machine, Suzar- of. Car-coupling. F. O. Jones Car door, Grain. C. E. Sievert Car-coupling. F. O. Jones Car door, Grain. C. E. Sievert Car-coupling. F. O. Jones Car door, Grain. C. E. Sievert Car-coupling. F. O. Jones Car door, Grain. C. E. Sievert Concete nelway-tie. J. J. R. Ferrer Coke, Hot man Suzar- Contents of matter. F. M. E. Modgson Converse, Electically-heated. C. E. Terwilliger Conversing-machine. W. F. Uploff Cars and other road-carriages. Seat and body of motor- Car and C. J. A. Griffith Concret englw	Battery-vaultF. H. T. Potter
Bed. C. S. Loekwood Bed. C. S. Loekwood Bed. Davenport. J. G. G. De Moss Bed. Sofa- L. G. Justh Bed. Sofa- L. G. L. W. Uhlenhuth Bedstreaks, Short rall for. H. De Boer Belt-fastener L. E. L. V. Uhlenhuth Berth. Steeping-car C. C. F. Rydberg Binder. Loose-leaf. E. J. Pottinger Blind-bolder, Window- J. J. Leiser Bind-bolder, Window- J. J. Leiser Bords from pieces, Machine for building up. J. Kunz Bottle-capping machine. H. A. Allwardt Bottle-cooler, Inverted. A. L. Boggs Bottle-capping machine. A. Schneid's Bottle-daybrine. A. Schneid's Bottle-fasket. Water. C. Singer Box-lid supporter. W. B. Speice Brake-beam. W. E. Fowler, Jr. Brake-beam. M. W. E. Fowler, Jr. Brake-beam. M. W. E. Fowler, Jr. Brake-beam. M. W. E. Fowler, Jr. Brake-beam. Adjustable. E. A. Le Bean Brake-beam. Adjustable. E. A. Le Bean Brake-head. Selection of the recovery Brush. A. H. Ackerman Bucket. T. M. Wakefield Building-block. W. W. D. Myers Burglary safeguarding apparatus. E. Maynard Burner. F. C. Chadborn Button, Thread. H. Laula Buttonhole-piece. C. S. Smith By-products, Apparatus for the recovery of. C. P. M. Hamilin Cabinet, Cup-receiving. O. T. Hanson Cabinet, Druggist's label- "H. W. Broenmeistek Cake-mixer. therest. J. H. P. Farrar et al. Camera attachment. A. R. E. Swoyer Cane entiting and crushing machine, Suzar- of. Car-coupling. F. O. Jones Car door, Grain. C. E. Sievert Car-coupling. F. O. Jones Car door, Grain. C. E. Sievert Car-coupling. F. O. Jones Car door, Grain. C. E. Sievert Car-coupling. F. O. Jones Car door, Grain. C. E. Sievert Concete nelway-tie. J. J. R. Ferrer Coke, Hot man Suzar- Contents of matter. F. M. E. Modgson Converse, Electically-heated. C. E. Terwilliger Conversing-machine. W. F. Uploff Cars and other road-carriages. Seat and body of motor- Car and C. J. A. Griffith Concret englw	Bearing, Ball H. Hess
Beelsteads, Short rail for. H. De Boer Belt-fasterer Lelt, V. Uthenhuth Berth, Sleeping-cap E. L. V. Uthenhuth Berth, Sleeping-cap E. C. F. Rydberg Binder, Loose-leaf C. F. Rydberg Binder, Loose-leaf C. E. J. Pottinger Bit-pitcher, Antomatic J. A. Pilcher Binder, Loose-leaf E. J. Pottinger Bit-pitcher, Antomatic J. A. Pilcher Bind-holder, Window— J. J. Leiser Boards from pieces, Machine for building up J. Sense Bottle-capping machine H. A. Allwardt Bottle-capping machine H. A. Allwardt Bottle-capping machine A. Schneider Box-lid supporter W. B. Speice Brake-beam W. E. Fowler, Jr. Brake-beam C. H. Williams, Jr. Brake-beam M. W. E. Fowler, Jr. Brake-head, Adjustable E. A. Le Bean Brick-stacker H. Welliams, Jr. Brake-head, Adjustable E. A. Le Bean Brick-stacker H. Weller Brush A. H. Ackerman Bucket T. M. Wakefield Building-block W. W. D. Myers Burglary safeguarding apparatus F. C. Chadborn Burton, Thread H. L. Laula Buttonhole-piece C. C. S. Smith By-products, Apparatus for the recovery of P. M. Hamilin Cabinet, Druggist's label—C. C. S. Smith By-products, Apparatus for the recovery of P. M. Hamilin Cabinet, Druggist's label—Calculator, Interest J. H. P. Farrar et al. Camera at achment A. E. Swoyer Cane entiting and crushing machine, Suzar, P. A. Pleon Carlenon, Grain C. C. S. Anderson Carnera, Magazine—T. Zabrocki Cap and oil-cup, Combined, R. McNaughton Car anchor, Tank T. C. C. S. Anderson Cars and other road-carriage, Seat and body of motor—A. E. Hodgson Cars and other road-carriage, Seat and body of motor—A. E. Hodgson Cars and other road-carriage, Seat and body of motor—A. E. Hodgson Carsing apparatus. W. A. Turbavne Chan, and other road-carriage, Seat and body of motor—A. E. Hodgson Carsing apparatus. W. A. Turbavne Chan, and other road-carriage, Seat and body of motor—A. E. Hodgson Carsing apparatus. W. A. Turbavne Chan, and other conditions and policing apparatus. W. P. Porte	Bearing with resilient cage, Roller-
Beelsteads, Short rail for. H. De Boer Belt-fasterer Lelt, V. Uthenhuth Berth, Sleeping-cap E. L. V. Uthenhuth Berth, Sleeping-cap E. C. F. Rydberg Binder, Loose-leaf C. F. Rydberg Binder, Loose-leaf C. E. J. Pottinger Bit-pitcher, Antomatic J. A. Pilcher Binder, Loose-leaf E. J. Pottinger Bit-pitcher, Antomatic J. A. Pilcher Bind-holder, Window— J. J. Leiser Boards from pieces, Machine for building up J. Sense Bottle-capping machine H. A. Allwardt Bottle-capping machine H. A. Allwardt Bottle-capping machine A. Schneider Box-lid supporter W. B. Speice Brake-beam W. E. Fowler, Jr. Brake-beam C. H. Williams, Jr. Brake-beam M. W. E. Fowler, Jr. Brake-head, Adjustable E. A. Le Bean Brick-stacker H. Welliams, Jr. Brake-head, Adjustable E. A. Le Bean Brick-stacker H. Weller Brush A. H. Ackerman Bucket T. M. Wakefield Building-block W. W. D. Myers Burglary safeguarding apparatus F. C. Chadborn Burton, Thread H. L. Laula Buttonhole-piece C. C. S. Smith By-products, Apparatus for the recovery of P. M. Hamilin Cabinet, Druggist's label—C. C. S. Smith By-products, Apparatus for the recovery of P. M. Hamilin Cabinet, Druggist's label—Calculator, Interest J. H. P. Farrar et al. Camera at achment A. E. Swoyer Cane entiting and crushing machine, Suzar, P. A. Pleon Carlenon, Grain C. C. S. Anderson Carnera, Magazine—T. Zabrocki Cap and oil-cup, Combined, R. McNaughton Car anchor, Tank T. C. C. S. Anderson Cars and other road-carriage, Seat and body of motor—A. E. Hodgson Cars and other road-carriage, Seat and body of motor—A. E. Hodgson Cars and other road-carriage, Seat and body of motor—A. E. Hodgson Carsing apparatus. W. A. Turbavne Chan, and other road-carriage, Seat and body of motor—A. E. Hodgson Carsing apparatus. W. A. Turbavne Chan, and other road-carriage, Seat and body of motor—A. E. Hodgson Carsing apparatus. W. A. Turbavne Chan, and other conditions and policing apparatus. W. P. Porte	Bed. G. G. De Moss Bed. Davemort- J. G. Curtis
Box-lid supporter: W. B. Speice Brake-beann. W. E. Fowler, Ir. Brake-beann. C. H. Williams, Jr. Brake-beann. C. H. Williams, Jr. Brake-beann. Third suspension for E. A. LeBean Brick-stacker. H. Weber Brish. A. H. Ackerman Bucket. T. M. Wakefield Building-block. W. D. Myers Burglary safeguarding apparatus. E. Maynard Burner. F. C. Chadborn Intton. Thread. H. Laula Buttonhole-piece. C. S. Smith By-products, Apparatus for the recovery of. P. M. Hamilin Cabinet, Cup-receiving. O. T. Hanson Cabinet, Druggist's label- Cake-mixer. L. L. Van Engelen Calculator, Interest. J. H. P. Farrar et al. Camera attachment. A. E. Swoyer Cane entting and crushing machine, Sugar- P. A. Pleon Carnera, Magazine. T. Zabrocki Cap and oil-cup. Combined. R. McNaughron Car anchor. Tanks. L. E. Kelfer Car-coupling. F. O. Jones Cardoor lock. W. F. Uphoff Cars and other road-carriages. Scat and body of motor- A. E. Hodgson Carnies. C. E. Sievert Cardoor lock. W. F. Uphoff Cars and other road-carriages. Scat and body of motor- A. E. Hodgson Carnies C. E. Sievert Carrier. C. J. Anderson Casting steel boxes. L. G. Woods Cement, concrete, or similar material, Re- inforcing rod or bar for N. L. Hall Cement sink construction. H. H. Jones Chain-making machine, Weldless-link C. A. Lewis Charing apparatus. W. A. Turbavne Churn. C. Watchman's J. Schlenker-Grusen Clock Watchman's J. Schlenker-Grusen Clock Watchman's J. Schlenker-Grusen Clock watchman's J. Schlenker-Grusen Clock watchman's J. Schlenker-Grusen Clothes-clamp. J. W. Finch Composition of matter. E. H. Cooper Coal-breaker. Hydranlie. W. Pill Coaling apparatus. J. F. Curtis Corn, Storage system for seed. Concrete conveyer and distributer. G. Mingoo Concrete conveyer and distributer.	Bed. Sofa L. G. Justh Bedsteads, Short rail for H. De Boer
Box-lid supporter: W. B. Speice Brake-beann. W. E. Fowler, Ir. Brake-beann. C. H. Williams, Jr. Brake-beann. C. H. Williams, Jr. Brake-beann. Third suspension for E. A. LeBean Brick-stacker. H. Weber Brish. A. H. Ackerman Bucket. T. M. Wakefield Building-block. W. D. Myers Burglary safeguarding apparatus. E. Maynard Burner. F. C. Chadborn Intton. Thread. H. Laula Buttonhole-piece. C. S. Smith By-products, Apparatus for the recovery of. P. M. Hamilin Cabinet, Cup-receiving. O. T. Hanson Cabinet, Druggist's label- Cake-mixer. L. L. Van Engelen Calculator, Interest. J. H. P. Farrar et al. Camera attachment. A. E. Swoyer Cane entting and crushing machine, Sugar- P. A. Pleon Carnera, Magazine. T. Zabrocki Cap and oil-cup. Combined. R. McNaughron Car anchor. Tanks. L. E. Kelfer Car-coupling. F. O. Jones Cardoor lock. W. F. Uphoff Cars and other road-carriages. Scat and body of motor- A. E. Hodgson Carnies. C. E. Sievert Cardoor lock. W. F. Uphoff Cars and other road-carriages. Scat and body of motor- A. E. Hodgson Carnies C. E. Sievert Carrier. C. J. Anderson Casting steel boxes. L. G. Woods Cement, concrete, or similar material, Re- inforcing rod or bar for N. L. Hall Cement sink construction. H. H. Jones Chain-making machine, Weldless-link C. A. Lewis Charing apparatus. W. A. Turbavne Churn. C. Watchman's J. Schlenker-Grusen Clock Watchman's J. Schlenker-Grusen Clock Watchman's J. Schlenker-Grusen Clock watchman's J. Schlenker-Grusen Clock watchman's J. Schlenker-Grusen Clothes-clamp. J. W. Finch Composition of matter. E. H. Cooper Coal-breaker. Hydranlie. W. Pill Coaling apparatus. J. F. Curtis Corn, Storage system for seed. Concrete conveyer and distributer. G. Mingoo Concrete conveyer and distributer.	Belt-fastenerE. L. V. Uhlenhuth Berth. Sleeping-carC. F. Rydberg
Box-lid supporter: W. B. Speice Brake-beann. W. E. Fowler, Ir. Brake-beann. C. H. Williams, Jr. Brake-beann. C. H. Williams, Jr. Brake-beann. Third suspension for E. A. LeBean Brick-stacker. H. Weber Brish. A. H. Ackerman Bucket. T. M. Wakefield Building-block. W. D. Myers Burglary safeguarding apparatus. E. Maynard Burner. F. C. Chadborn Intton. Thread. H. Laula Buttonhole-piece. C. S. Smith By-products, Apparatus for the recovery of. P. M. Hamilin Cabinet, Cup-receiving. O. T. Hanson Cabinet, Druggist's label- Cake-mixer. L. L. Van Engelen Calculator, Interest. J. H. P. Farrar et al. Camera attachment. A. E. Swoyer Cane entting and crushing machine, Sugar- P. A. Pleon Carnera, Magazine. T. Zabrocki Cap and oil-cup. Combined. R. McNaughron Car anchor. Tanks. L. E. Kelfer Car-coupling. F. O. Jones Cardoor lock. W. F. Uphoff Cars and other road-carriages. Scat and body of motor- A. E. Hodgson Carnies. C. E. Sievert Cardoor lock. W. F. Uphoff Cars and other road-carriages. Scat and body of motor- A. E. Hodgson Carnies C. E. Sievert Carrier. C. J. Anderson Casting steel boxes. L. G. Woods Cement, concrete, or similar material, Re- inforcing rod or bar for N. L. Hall Cement sink construction. H. H. Jones Chain-making machine, Weldless-link C. A. Lewis Charing apparatus. W. A. Turbavne Churn. C. Watchman's J. Schlenker-Grusen Clock Watchman's J. Schlenker-Grusen Clock Watchman's J. Schlenker-Grusen Clock watchman's J. Schlenker-Grusen Clock watchman's J. Schlenker-Grusen Clothes-clamp. J. W. Finch Composition of matter. E. H. Cooper Coal-breaker. Hydranlie. W. Pill Coaling apparatus. J. F. Curtis Corn, Storage system for seed. Concrete conveyer and distributer. G. Mingoo Concrete conveyer and distributer.	Binder, Loose-leafC. E. Canan Binder, Loose-leafE. J. Pottinger
Box-lid supporter: W. B. Speice Brake-beann. W. E. Fowler, Ir. Brake-beann. C. H. Williams, Jr. Brake-beann. C. H. Williams, Jr. Brake-beann. Third suspension for E. A. LeBean Brick-stacker. H. Weber Brish. A. H. Ackerman Bucket. T. M. Wakefield Building-block. W. D. Myers Burglary safeguarding apparatus. E. Maynard Burner. F. C. Chadborn Intton. Thread. H. Laula Buttonhole-piece. C. S. Smith By-products, Apparatus for the recovery of. P. M. Hamilin Cabinet, Cup-receiving. O. T. Hanson Cabinet, Druggist's label- Cake-mixer. L. L. Van Engelen Calculator, Interest. J. H. P. Farrar et al. Camera attachment. A. E. Swoyer Cane entting and crushing machine, Sugar- P. A. Pleon Carnera, Magazine. T. Zabrocki Cap and oil-cup. Combined. R. McNaughron Car anchor. Tanks. L. E. Kelfer Car-coupling. F. O. Jones Cardoor lock. W. F. Uphoff Cars and other road-carriages. Scat and body of motor- A. E. Hodgson Carnies. C. E. Sievert Cardoor lock. W. F. Uphoff Cars and other road-carriages. Scat and body of motor- A. E. Hodgson Carnies C. E. Sievert Carrier. C. J. Anderson Casting steel boxes. L. G. Woods Cement, concrete, or similar material, Re- inforcing rod or bar for N. L. Hall Cement sink construction. H. H. Jones Chain-making machine, Weldless-link C. A. Lewis Charing apparatus. W. A. Turbavne Churn. C. Watchman's J. Schlenker-Grusen Clock Watchman's J. Schlenker-Grusen Clock Watchman's J. Schlenker-Grusen Clock watchman's J. Schlenker-Grusen Clock watchman's J. Schlenker-Grusen Clothes-clamp. J. W. Finch Composition of matter. E. H. Cooper Coal-breaker. Hydranlie. W. Pill Coaling apparatus. J. F. Curtis Corn, Storage system for seed. Concrete conveyer and distributer. G. Mingoo Concrete conveyer and distributer.	Blind-holder, WindowJ. J. Leiser Roards from pieces, Machine, for building
Box-lid supporter: W. B. Speice Brake-beann. W. E. Fowler, Ir. Brake-beann. C. H. Williams, Jr. Brake-beann. C. H. Williams, Jr. Brake-beann. Third suspension for E. A. LeBean Brick-stacker. H. Weber Brish. A. H. Ackerman Bucket. T. M. Wakefield Building-block. W. D. Myers Burglary safeguarding apparatus. E. Maynard Burner. F. C. Chadborn Intton. Thread. H. Laula Buttonhole-piece. C. S. Smith By-products, Apparatus for the recovery of. P. M. Hamilin Cabinet, Cup-receiving. O. T. Hanson Cabinet, Druggist's label- Cake-mixer. L. L. Van Engelen Calculator, Interest. J. H. P. Farrar et al. Camera attachment. A. E. Swoyer Cane entting and crushing machine, Sugar- P. A. Pleon Carnera, Magazine. T. Zabrocki Cap and oil-cup. Combined. R. McNaughron Car anchor. Tanks. L. E. Kelfer Car-coupling. F. O. Jones Cardoor lock. W. F. Uphoff Cars and other road-carriages. Scat and body of motor- A. E. Hodgson Carnies. C. E. Sievert Cardoor lock. W. F. Uphoff Cars and other road-carriages. Scat and body of motor- A. E. Hodgson Carnies C. E. Sievert Carrier. C. J. Anderson Casting steel boxes. L. G. Woods Cement, concrete, or similar material, Re- inforcing rod or bar for N. L. Hall Cement sink construction. H. H. Jones Chain-making machine, Weldless-link C. A. Lewis Charing apparatus. W. A. Turbavne Churn. C. Watchman's J. Schlenker-Grusen Clock Watchman's J. Schlenker-Grusen Clock Watchman's J. Schlenker-Grusen Clock watchman's J. Schlenker-Grusen Clock watchman's J. Schlenker-Grusen Clothes-clamp. J. W. Finch Composition of matter. E. H. Cooper Coal-breaker. Hydranlie. W. Pill Coaling apparatus. J. F. Curtis Corn, Storage system for seed. Concrete conveyer and distributer. G. Mingoo Concrete conveyer and distributer.	upE. J. Bell Boots or shoes, Ice-grip forJ. Kunz
Box-lid supporter: W. B. Speice Brake-beann. W. E. Fowler, Ir. Brake-beann. C. H. Williams, Jr. Brake-beann. C. H. Williams, Jr. Brake-beann. Third suspension for E. A. LeBean Brick-stacker. H. Weber Brish. A. H. Ackerman Bucket. T. M. Wakefield Building-block. W. D. Myers Burglary safeguarding apparatus. E. Maynard Burner. F. C. Chadborn Intton. Thread. H. Laula Buttonhole-piece. C. S. Smith By-products, Apparatus for the recovery of. P. M. Hamilin Cabinet, Cup-receiving. O. T. Hanson Cabinet, Druggist's label- Cake-mixer. L. L. Van Engelen Calculator, Interest. J. H. P. Farrar et al. Camera attachment. A. E. Swoyer Cane entting and crushing machine, Sugar- P. A. Pleon Carnera, Magazine. T. Zabrocki Cap and oil-cup. Combined. R. McNaughron Car anchor. Tanks. L. E. Kelfer Car-coupling. F. O. Jones Cardoor lock. W. F. Uphoff Cars and other road-carriages. Scat and body of motor- A. E. Hodgson Carnies. C. E. Sievert Cardoor lock. W. F. Uphoff Cars and other road-carriages. Scat and body of motor- A. E. Hodgson Carnies C. E. Sievert Carrier. C. J. Anderson Casting steel boxes. L. G. Woods Cement, concrete, or similar material, Re- inforcing rod or bar for N. L. Hall Cement sink construction. H. H. Jones Chain-making machine, Weldless-link C. A. Lewis Charing apparatus. W. A. Turbavne Churn. C. Watchman's J. Schlenker-Grusen Clock Watchman's J. Schlenker-Grusen Clock Watchman's J. Schlenker-Grusen Clock watchman's J. Schlenker-Grusen Clock watchman's J. Schlenker-Grusen Clothes-clamp. J. W. Finch Composition of matter. E. H. Cooper Coal-breaker. Hydranlie. W. Pill Coaling apparatus. J. F. Curtis Corn, Storage system for seed. Concrete conveyer and distributer. G. Mingoo Concrete conveyer and distributer.	Bottle-capping machineH. A. Allwardt Bottle-cooler, InvertedA. L. Boggs
Bucket. T. M. Wakefield Building-block. W. D. Myers Burglary safeguarding apparatus. E. Maynard Burner. F. C. Chadborn Button, Thread. H. Laula Buttonhole-piece. C. S. Smith By-products, Apparatus for the recovery of. P. M. Hamiin Cabinet, Cup-receiving. O. T. Hanson Cabinet, Unp-receiving. O. T. Hanson Cabinet, Unpreceiving. O. T. Hanson Calledator, Interest. J. H. P. Farrar et al. Camera attachment. A. E. Swoyer Cane entiting and crushing machine, Sugar- Car door, Grain. C. E. Sievert Car-door lock. W. F. Uphoff Cars and other road-carriages. Seat and body of motor. A. E. Hodgson Caronsel. F. O. Degenhardt Carriage, Folding. L. A. Griffith Carrier. C. J. Anderson Casting steel boxes. L. G. Woods Cement, concrete, or similar material, Re- Informing rod or bar for. N. L. Hall Cement sink construction. H. H. Jones Chain-making machine, Weldless-link. C. A. Lewis Charging apparatus. W. A. Turbavne Charn. C. Morrison Clamping device. N. Piquette Cleaning and pruning shears. J. P. South Clock (2 pats.). W. E. Porter Clock, Watchman's. J. Schlenker-Grusen Clothes-claup. J. W. Finch Clothes-stick. J. C. Sangers Clutch. H. G. Saecker Coal-breaker, Hydranlie. W. Pill Coaling apparatus. Y. Ferrer Cock, Hot and cold water. D. W. McNell Compressing-machine. E. S. Smith Compressing-machine. E. H. Cooper Collar-supporter. A. M. Windrich Compressing-machine. E. S. Smith Compressing-machine. E. S. Smith Compress	Bottle-filling machine A. Schneider Bottle jacket. Water C. Singer
Bucket. T. M. Wakefield Building-block. W. D. Myers Burglary safeguarding apparatus. E. Maynard Burner. F. C. Chadborn Button, Thread. H. Laula Buttonhole-piece. C. S. Smith By-products, Apparatus for the recovery of. P. M. Hamiin Cabinet, Cup-receiving. O. T. Hanson Cabinet, Unp-receiving. O. T. Hanson Cabinet, Unpreceiving. O. T. Hanson Calledator, Interest. J. H. P. Farrar et al. Camera attachment. A. E. Swoyer Cane entiting and crushing machine, Sugar- Car door, Grain. C. E. Sievert Car-door lock. W. F. Uphoff Cars and other road-carriages. Seat and body of motor. A. E. Hodgson Caronsel. F. O. Degenhardt Carriage, Folding. L. A. Griffith Carrier. C. J. Anderson Casting steel boxes. L. G. Woods Cement, concrete, or similar material, Re- Informing rod or bar for. N. L. Hall Cement sink construction. H. H. Jones Chain-making machine, Weldless-link. C. A. Lewis Charging apparatus. W. A. Turbavne Charn. C. Morrison Clamping device. N. Piquette Cleaning and pruning shears. J. P. South Clock (2 pats.). W. E. Porter Clock, Watchman's. J. Schlenker-Grusen Clothes-claup. J. W. Finch Clothes-stick. J. C. Sangers Clutch. H. G. Saecker Coal-breaker, Hydranlie. W. Pill Coaling apparatus. Y. Ferrer Cock, Hot and cold water. D. W. McNell Compressing-machine. E. S. Smith Compressing-machine. E. H. Cooper Collar-supporter. A. M. Windrich Compressing-machine. E. S. Smith Compressing-machine. E. S. Smith Compress	Brake-beam W. E. Fowler, Jr. Brake-beam C. H. Williams, Jr.
Bucket. T. M. Wakefield Building-block. W. D. Myers Burglary safeguarding apparatus. E. Maynard Burner. F. C. Chadborn Button, Thread. H. Laula Buttonhole-piece. C. S. Smith By-products, Apparatus for the recovery of. P. M. Hamiin Cabinet, Cup-receiving. O. T. Hanson Cabinet, Unp-receiving. O. T. Hanson Cabinet, Unpreceiving. O. T. Hanson Calledator, Interest. J. H. P. Farrar et al. Camera attachment. A. E. Swoyer Cane entiting and crushing machine, Sugar- Car door, Grain. C. E. Sievert Car-door lock. W. F. Uphoff Cars and other road-carriages. Seat and body of motor. A. E. Hodgson Caronsel. F. O. Degenhardt Carriage, Folding. L. A. Griffith Carrier. C. J. Anderson Casting steel boxes. L. G. Woods Cement, concrete, or similar material, Re- Informing rod or bar for. N. L. Hall Cement sink construction. H. H. Jones Chain-making machine, Weldless-link. C. A. Lewis Charging apparatus. W. A. Turbavne Charn. C. Morrison Clamping device. N. Piquette Cleaning and pruning shears. J. P. South Clock (2 pats.). W. E. Porter Clock, Watchman's. J. Schlenker-Grusen Clothes-claup. J. W. Finch Clothes-stick. J. C. Sangers Clutch. H. G. Saecker Coal-breaker, Hydranlie. W. Pill Coaling apparatus. Y. Ferrer Cock, Hot and cold water. D. W. McNell Compressing-machine. E. S. Smith Compressing-machine. E. H. Cooper Collar-supporter. A. M. Windrich Compressing-machine. E. S. Smith Compressing-machine. E. S. Smith Compress	Brake-beams, Third suspension forE. A. LeBean
Bucket. T. M. Wakefield Building-block. W. D. Myers Burglary safeguarding apparatus. E. Maynard Burner. F. C. Chadborn Button, Thread. H. Laula Buttonhole-piece. C. S. Smith By-products, Apparatus for the recovery of. P. M. Hamiin Cabinet, Cup-receiving. O. T. Hanson Cabinet, Unp-receiving. O. T. Hanson Cabinet, Unpreceiving. O. T. Hanson Calledator, Interest. J. H. P. Farrar et al. Camera attachment. A. E. Swoyer Cane entiting and crushing machine, Sugar- Car door, Grain. C. E. Sievert Car-door lock. W. F. Uphoff Cars and other road-carriages. Seat and body of motor. A. E. Hodgson Caronsel. F. O. Degenhardt Carriage, Folding. L. A. Griffith Carrier. C. J. Anderson Casting steel boxes. L. G. Woods Cement, concrete, or similar material, Re- Informing rod or bar for. N. L. Hall Cement sink construction. H. H. Jones Chain-making machine, Weldless-link. C. A. Lewis Charging apparatus. W. A. Turbavne Charn. C. Morrison Clamping device. N. Piquette Cleaning and pruning shears. J. P. South Clock (2 pats.). W. E. Porter Clock, Watchman's. J. Schlenker-Grusen Clothes-claup. J. W. Finch Clothes-stick. J. C. Sangers Clutch. H. G. Saecker Coal-breaker, Hydranlie. W. Pill Coaling apparatus. Y. Ferrer Cock, Hot and cold water. D. W. McNell Compressing-machine. E. S. Smith Compressing-machine. E. H. Cooper Collar-supporter. A. M. Windrich Compressing-machine. E. S. Smith Compressing-machine. E. S. Smith Compress	Brake-head, Adjustable. E. A. Le Bean Brick-stacker. H. Weber
Burglary safeguarding apparatus. E. Maynard Burner. E. Maynard Burner. E. Maynard Burton. Button. Thread. H. Laula Buttonhole-piece. C. S. Smith By-products, Apparatus for the recovery of. P. M. Hamilin Cabinet, Cup-receiving. O. T. Hanson Cabinet, Dringgist's label. II. W. Broenmelsiek Cake-mixer. II. W. Broenmelsiek Cake-mixer. II. W. Broenmelsiek Cake-mixer. II. W. Broenmelsiek Cake-mixer. L. Van Engelen Calculator. Interest. J. H. P. Farrar et al. Camera attachment. A. E. Swoyer Cane centring and crinshing machine, Sugar. P. A. Picon Camera, Magazine. P. A. Picon Camera, Magazine. C. E. Sievert Car-door lock. Car door, Grain. C. E. Sievert Car-door lock. W. F. Uphoff Cars and other road-carriages. Seat and body of motor. A. E. Hodgson Caronsel. E. F. O. Doegenhardt Carriage, Folding. L. A. Griffith Carrier. C. J. Anderson Casting steel boxes. L. G. Woods Cement, concrete, or similar material, Re- inforcing rod or bar for. C. A. Lewis Charging apparatus. C. A. Lewis Charging apparatus. C. A. Lewis Charging apparatus. C. A. Lewis Charging and polishing apparatus. C. A. Lewis Charging and pruning shears. J. P. South Clock (2 pats.) C. A. Surns Clipping and pruning shears. J. W. Finch Clock, Watchman's. J. Schlenker-Grusen Clothes-stick. J. C. Sangers Clothes-stick. J. C. Sangers Clothes-stick. J. C. Sangers Clothes-stick. Conlination-lock. Concrete coluveyer and distributer. G. Hekund Concrete coluveyer and distributer. Conlination-lock. Concrete coluveyer and distributer. Conlination-lock. Concrete coluveyer and distributer. Concrete structure, Reinforced. Concrete structure, Reinforced. Concrete system for seed. Concrete system for seed. Concrete coluveyer and distributer. Concrete structure, Reinforced. Concrete system for seed. Concrete system for seed. Concrete system for seed. Concret	Brush. A. H. Ackerman Bucket. T. M. Wakefield
Burton, Thread H. Laula Buttonhole-piece C. S. Smith By-products, Apparatus for the recovery of P. M. Hamilin Cabinet, Cup-receiving. O. T. Hanson Cabinet, Cup-receiving. O. T. Hanson Cabinet, Druggist's label II. W. Broemmelsiek Cake-mixer L. Van Engelen Calculator, Interest. J. H. P. Farrar et al. Camera attachment. A. E. Swoyer Cane cutting and crushing machine, Sugar- erane cutting and crushing machine, Sugar- Camera, Magazine T. Zabrocki Cap and oil-cup, Combined. R. McNaughton Car anchor, Tank L. E. Keller Car-coupling F. O. Jones Car door, Grain C. E. Sievert Car-door lock W. F. Uphoff Cars and other road-carriages, Seat and body of motor A. E. Hodgson Caronsel F. O. Degenhardt Carriage, Folding L. A. Griffith Carrier C. J. Anderson Casting steel boxes L. G. Woods Cement, concrete, or similar material, Re- Inforcing rod or bar for N. L. Hall Cement sink construction H. H. Jones Chain-making machine, Weldless-link C. A. Lewis Charging apparatus W. A. Turbayne Churn C. Morrison Clamping device N. Piquette Cleaning and polishing apparatus Charging apparatus W. E. Porter Clock, Watchman's .J. Schlenker-Grusen Clothes-clampJ. W. Finch Clothes-stickJ. C. Sangers ClitchH. G. Saecker Coal-breaker, HydraulieW. Pill Coaling apparatusY. Ferrer Cock, Hot and cold water. D. W. McNeil Coffee-pulperR. Bahmann Coin-packagerF. L. Sattley Collar-supporterA. M. Windrich Compound hydro-steam engine. D. Maclean Concrete conveyer and distributer. G. Mingo Concrete rallway-tieJ. J. Breeton Concrete structure, Reinforced. D. W. Daley Control systemR. P. Jockson Conveyer.	Burgiary safeguarding apparatus
P. A. Picon Camera, Magazine T. Zabrocki Cap and oil-cup, Combined, R. McNaughton Car anchor, Tank L. E. Keller Car-coupling F. O. Jones Car door, Grain C. E. Sievert Car-door lock W. F. Uphoff Cars and other road-carriages, Scat and body of motor A. E. Hodgson Caronsel F. O. Degenhardt Carriage, Folding L. A. Griffith Carriage, Folding L. A. Griffith Carriage, Folding L. A. Griffith Carriage Folding Folding Recommendation Casting steel boxes L. G. Woods Cement, concrete or similar material, Re- inforcing rod or bar for N. L. H. H. Jones Chain-making machine P. C. Morrison Clamping device Similar material, Re- inforcing apparatus W. A. Turbayne Clamping device N. Piquette Cleaning and polishing apparatus S. P. South Clock (2 pats.) W. E. Porter Clock Watchman's J. Schlenker-Grusen Clothes-clamp J. W. Finch Clothes-stick J. C. Sangers Clutch J. C. Sangers Clutch H. G. Saecker Coal-breaker, Hydranlie W. Pill Coaling apparatus Y. Ferrer Cock, Hot and cold water D. W. McNeil Coffee-pulper R. Bahmann Coin-packager F. L. Sattley Collar-supporter R. Bahmann Coin-packager F. L. Sattley Collar-supporter R. Bahmann Compensing-machine E. S. Smith Composition of matter F. Mekush Concrete critiway-tie J. J. Brereton Cocket Electrically-heated C. E. Terwilliger Cork-extra	Burner F. C. Chadborn Button, Thread H. Laula
P. A. Picon Camera, Magazine T. Zabrocki Cap and oil-cup, Combined, R. McNaughton Car anchor, Tank L. E. Keller Car-coupling F. O. Jones Car door, Grain C. E. Sievert Car-door lock W. F. Uphoff Cars and other road-carriages, Scat and body of motor A. E. Hodgson Caronsel F. O. Degenhardt Carriage, Folding L. A. Griffith Carriage, Folding L. A. Griffith Carriage, Folding L. A. Griffith Carriage Folding Folding Recommendation Casting steel boxes L. G. Woods Cement, concrete or similar material, Re- inforcing rod or bar for N. L. H. H. Jones Chain-making machine P. C. Morrison Clamping device Similar material, Re- inforcing apparatus W. A. Turbayne Clamping device N. Piquette Cleaning and polishing apparatus S. P. South Clock (2 pats.) W. E. Porter Clock Watchman's J. Schlenker-Grusen Clothes-clamp J. W. Finch Clothes-stick J. C. Sangers Clutch J. C. Sangers Clutch H. G. Saecker Coal-breaker, Hydranlie W. Pill Coaling apparatus Y. Ferrer Cock, Hot and cold water D. W. McNeil Coffee-pulper R. Bahmann Coin-packager F. L. Sattley Collar-supporter R. Bahmann Coin-packager F. L. Sattley Collar-supporter R. Bahmann Compensing-machine E. S. Smith Composition of matter F. Mekush Concrete critiway-tie J. J. Brereton Cocket Electrically-heated C. E. Terwilliger Cork-extra	Buttonhole-piece
P. A. Picon Camera, Magazine T. Zabrocki Cap and oil-cup, Combined, R. McNaughton Car anchor, Tank L. E. Keller Car-coupling F. O. Jones Car door, Grain C. E. Sievert Car-door lock W. F. Uphoff Cars and other road-carriages, Scat and body of motor A. E. Hodgson Caronsel F. O. Degenhardt Carriage, Folding L. A. Griffith Carriage, Folding L. A. Griffith Carriage, Folding L. A. Griffith Carriage Folding Folding Recommendation Casting steel boxes L. G. Woods Cement, concrete or similar material, Re- inforcing rod or bar for N. L. H. H. Jones Chain-making machine P. C. Morrison Clamping device Similar material, Re- inforcing apparatus W. A. Turbayne Clamping device N. Piquette Cleaning and polishing apparatus S. P. South Clock (2 pats.) W. E. Porter Clock Watchman's J. Schlenker-Grusen Clothes-clamp J. W. Finch Clothes-stick J. C. Sangers Clutch J. C. Sangers Clutch H. G. Saecker Coal-breaker, Hydranlie W. Pill Coaling apparatus Y. Ferrer Cock, Hot and cold water D. W. McNeil Coffee-pulper R. Bahmann Coin-packager F. L. Sattley Collar-supporter R. Bahmann Coin-packager F. L. Sattley Collar-supporter R. Bahmann Compensing-machine E. S. Smith Composition of matter F. Mekush Concrete critiway-tie J. J. Brereton Cocket Electrically-heated C. E. Terwilliger Cork-extra	of P. M. Hamlin Cabinet, Cup-receiving O. T. Hanson
P. A. Picon Camera, Magazine T. Zabrocki Cap and oil-cup, Combined, R. McNaughton Car anchor, Tank L. E. Keller Car-coupling F. O. Jones Car door, Grain C. E. Sievert Car-door lock W. F. Uphoff Cars and other road-carriages, Scat and body of motor A. E. Hodgson Caronsel F. O. Degenhardt Carriage, Folding L. A. Griffith Carriage, Folding L. A. Griffith Carriage, Folding L. A. Griffith Carriage Folding Folding Recommendation Casting steel boxes L. G. Woods Cement, concrete or similar material, Re- inforcing rod or bar for N. L. H. H. Jones Chain-making machine P. C. Morrison Clamping device Similar material, Re- inforcing apparatus W. A. Turbayne Clamping device N. Piquette Cleaning and polishing apparatus S. P. South Clock (2 pats.) W. E. Porter Clock Watchman's J. Schlenker-Grusen Clothes-clamp J. W. Finch Clothes-stick J. C. Sangers Clutch J. C. Sangers Clutch H. G. Saecker Coal-breaker, Hydranlie W. Pill Coaling apparatus Y. Ferrer Cock, Hot and cold water D. W. McNeil Coffee-pulper R. Bahmann Coin-packager F. L. Sattley Collar-supporter R. Bahmann Coin-packager F. L. Sattley Collar-supporter R. Bahmann Compensing-machine E. S. Smith Composition of matter F. Mekush Concrete critiway-tie J. J. Brereton Cocket Electrically-heated C. E. Terwilliger Cork-extra	Cabinet, Driggist's label
P. A. Picon Camera, Magazine T. Zabrocki Cap and oil-cup, Combined, R. McNaughton Car anchor, Tank L. E. Keller Car-coupling F. O. Jones Car door, Grain C. E. Sievert Car-door lock W. F. Uphoff Cars and other road-carriages, Scat and body of motor A. E. Hodgson Caronsel F. O. Degenhardt Carriage, Folding L. A. Griffith Carriage, Folding L. A. Griffith Carriage, Folding L. A. Griffith Carriage Folding Folding Recommendation Casting steel boxes L. G. Woods Cement, concrete or similar material, Re- inforcing rod or bar for N. L. H. H. Jones Chain-making machine P. C. Morrison Clamping device Similar material, Re- inforcing apparatus W. A. Turbayne Clamping device N. Piquette Cleaning and polishing apparatus S. P. South Clock (2 pats.) W. E. Porter Clock Watchman's J. Schlenker-Grusen Clothes-clamp J. W. Finch Clothes-stick J. C. Sangers Clutch J. C. Sangers Clutch H. G. Saecker Coal-breaker, Hydranlie W. Pill Coaling apparatus Y. Ferrer Cock, Hot and cold water D. W. McNeil Coffee-pulper R. Bahmann Coin-packager F. L. Sattley Collar-supporter R. Bahmann Coin-packager F. L. Sattley Collar-supporter R. Bahmann Compensing-machine E. S. Smith Composition of matter F. Mekush Concrete critiway-tie J. J. Brereton Cocket Electrically-heated C. E. Terwilliger Cork-extra	Calculator, Interest., J. H. P. Farrar et al.
Car anchor, Tank	Cane entting and crushing machine, Sugar. P. A. Picon
Charsing apparatus. W. A. Turbayne Charring apparatus. W. A. Turbayne Churn. C. Morrison Clamping device. N. Piquette Cleaning and polishing apparatus. P. S. Burns Clipping and pruning shears. J. P. South Clock (2 pats.). W. E. Porter Clock, Watchman's. J. Schlenker-Grusen Clothes-claup. J. W. Finch Clothes-stick. J. C. Sangers Clutch. H. G. Saccker Coal-breaker. Hydranlic. W. Pill Coaling apparatus. Y. Ferrer Cock, Hot and cold water. D. W. McNeil Coffee-pulper. R. Bahmann Coin-packarev. F. L. Sattley Coin-sorter (2 pats.). F. L. Sattley Collars. E. H. Cooper Collar-supporter. A. M. Windrich Combination-lock. O. J. Fahey Composition of matter. F. Mlekush Composition of matter. E. S. Smith Compressing-machine. E. S. Smith Compressing-machine. E. S. Smith Concrete conveyer and distributer. G. Mingo Concrete pile-molding shell. E. D. Watt Concrete railway-tie. J. J. Breeton Concrete rilway-tie. J. J. Breeton Concrete rilway-tie. J. J. F. Curtis Conveyer. J. Opfergelt Conveyer. J. Opfergelt Conveyer. Bucket. T. A. Edison Cooker. Electrically-heated. C. E. Terwilliger Cork-extractor. J. F. Curtis Corn, Stovage system for seed. M. L. Northrup Corset. S. A. Jenyns Cottou-cleaner S. D. Murray Crank. J. N. McGriff Cream-separator and churn. A. Fay Cream-separators, Driving attachment for.	Camera, Magazine
Charsing apparatus. W. A. Turbayne Charring apparatus. W. A. Turbayne Churn. C. Morrison Clamping device. N. Piquette Cleaning and polishing apparatus. P. S. Burns Clipping and pruning shears. J. P. South Clock (2 pats.). W. E. Porter Clock, Watchman's. J. Schlenker-Grusen Clothes-claup. J. W. Finch Clothes-stick. J. C. Sangers Clutch. H. G. Saccker Coal-breaker. Hydranlic. W. Pill Coaling apparatus. Y. Ferrer Cock, Hot and cold water. D. W. McNeil Coffee-pulper. R. Bahmann Coin-packarev. F. L. Sattley Coin-sorter (2 pats.). F. L. Sattley Collars. E. H. Cooper Collar-supporter. A. M. Windrich Combination-lock. O. J. Fahey Composition of matter. F. Mlekush Composition of matter. E. S. Smith Compressing-machine. E. S. Smith Compressing-machine. E. S. Smith Concrete conveyer and distributer. G. Mingo Concrete pile-molding shell. E. D. Watt Concrete railway-tie. J. J. Breeton Concrete rilway-tie. J. J. Breeton Concrete rilway-tie. J. J. F. Curtis Conveyer. J. Opfergelt Conveyer. J. Opfergelt Conveyer. Bucket. T. A. Edison Cooker. Electrically-heated. C. E. Terwilliger Cork-extractor. J. F. Curtis Corn, Stovage system for seed. M. L. Northrup Corset. S. A. Jenyns Cottou-cleaner S. D. Murray Crank. J. N. McGriff Cream-separator and churn. A. Fay Cream-separators, Driving attachment for.	Car anchor, Tank- L. E. Keiter Car-coupling. F. O. Jones Car door Crain. C. F. Sievent
Charsing apparatus. W. A. Turbayne Charring apparatus. W. A. Turbayne Churn. C. Morrison Clamping device. N. Piquette Cleaning and polishing apparatus. P. S. Burns Clipping and pruning shears. J. P. South Clock (2 pats.). W. E. Porter Clock, Watchman's. J. Schlenker-Grusen Clothes-claup. J. W. Finch Clothes-stick. J. C. Sangers Clutch. H. G. Saccker Coal-breaker. Hydranlic. W. Pill Coaling apparatus. Y. Ferrer Cock, Hot and cold water. D. W. McNeil Coffee-pulper. R. Bahmann Coin-packarev. F. L. Sattley Coin-sorter (2 pats.). F. L. Sattley Collars. E. H. Cooper Collar-supporter. A. M. Windrich Combination-lock. O. J. Fahey Composition of matter. F. Mlekush Composition of matter. E. S. Smith Compressing-machine. E. S. Smith Compressing-machine. E. S. Smith Concrete conveyer and distributer. G. Mingo Concrete pile-molding shell. E. D. Watt Concrete railway-tie. J. J. Breeton Concrete rilway-tie. J. J. Breeton Concrete rilway-tie. J. J. F. Curtis Conveyer. J. Opfergelt Conveyer. J. Opfergelt Conveyer. Bucket. T. A. Edison Cooker. Electrically-heated. C. E. Terwilliger Cork-extractor. J. F. Curtis Corn, Stovage system for seed. M. L. Northrup Corset. S. A. Jenyns Cottou-cleaner S. D. Murray Crank. J. N. McGriff Cream-separator and churn. A. Fay Cream-separators, Driving attachment for.	Car-door lockW. F. Uphoff Cars and other road-carriages. Seat and
Charsing apparatus. W. A. Turbayne Charring apparatus. W. A. Turbayne Churn. C. Morrison Clamping device. N. Piquette Cleaning and polishing apparatus. P. S. Burns Clipping and pruning shears. J. P. South Clock (2 pats.). W. E. Porter Clock, Watchman's. J. Schlenker-Grusen Clothes-claup. J. W. Finch Clothes-stick. J. C. Sangers Clutch. H. G. Saccker Coal-breaker. Hydranlic. W. Pill Coaling apparatus. Y. Ferrer Cock, Hot and cold water. D. W. McNeil Coffee-pulper. R. Bahmann Coin-packarev. F. L. Sattley Coin-sorter (2 pats.). F. L. Sattley Collars. E. H. Cooper Collar-supporter. A. M. Windrich Combination-lock. O. J. Fahey Composition of matter. F. Mlekush Composition of matter. E. S. Smith Compressing-machine. E. S. Smith Compressing-machine. E. S. Smith Concrete conveyer and distributer. G. Mingo Concrete pile-molding shell. E. D. Watt Concrete railway-tie. J. J. Breeton Concrete rilway-tie. J. J. Breeton Concrete rilway-tie. J. J. F. Curtis Conveyer. J. Opfergelt Conveyer. J. Opfergelt Conveyer. Bucket. T. A. Edison Cooker. Electrically-heated. C. E. Terwilliger Cork-extractor. J. F. Curtis Corn, Stovage system for seed. M. L. Northrup Corset. S. A. Jenyns Cottou-cleaner S. D. Murray Crank. J. N. McGriff Cream-separator and churn. A. Fay Cream-separators, Driving attachment for.	body of motorA. E. Hodgson CaronselF. O. Degenhardt
Charsing apparatus. W. A. Turbayne Charring apparatus. W. A. Turbayne Churn. C. Morrison Clamping device. N. Piquette Cleaning and polishing apparatus. P. S. Burns Clipping and pruning shears. J. P. South Clock (2 pats.). W. E. Porter Clock, Watchman's. J. Schlenker-Grusen Clothes-claup. J. W. Finch Clothes-stick. J. C. Sangers Clutch. H. G. Saccker Coal-breaker. Hydranlic. W. Pill Coaling apparatus. Y. Ferrer Cock, Hot and cold water. D. W. McNeil Coffee-pulper. R. Bahmann Coin-packarev. F. L. Sattley Coin-sorter (2 pats.). F. L. Sattley Collars. E. H. Cooper Collar-supporter. A. M. Windrich Combination-lock. O. J. Fahey Composition of matter. F. Mlekush Composition of matter. E. S. Smith Compressing-machine. E. S. Smith Compressing-machine. E. S. Smith Concrete conveyer and distributer. G. Mingo Concrete pile-molding shell. E. D. Watt Concrete railway-tie. J. J. Breeton Concrete rilway-tie. J. J. Breeton Concrete rilway-tie. J. J. F. Curtis Conveyer. J. Opfergelt Conveyer. J. Opfergelt Conveyer. Bucket. T. A. Edison Cooker. Electrically-heated. C. E. Terwilliger Cork-extractor. J. F. Curtis Corn, Stovage system for seed. M. L. Northrup Corset. S. A. Jenyns Cottou-cleaner S. D. Murray Crank. J. N. McGriff Cream-separator and churn. A. Fay Cream-separators, Driving attachment for.	Carriage, Folding. L. A. Griffith Carrier C. J. Anderson
Charsing apparatus. W. A. Turbayne Charring apparatus. W. A. Turbayne Churn. C. Morrison Clamping device. N. Piquette Cleaning and polishing apparatus. P. S. Burns Clipping and pruning shears. J. P. South Clock (2 pats.). W. E. Porter Clock, Watchman's. J. Schlenker-Grusen Clothes-claup. J. W. Finch Clothes-stick. J. C. Sangers Clutch. H. G. Saccker Coal-breaker. Hydranlic. W. Pill Coaling apparatus. Y. Ferrer Cock, Hot and cold water. D. W. McNeil Coffee-pulper. R. Bahmann Coin-packarev. F. L. Sattley Coin-sorter (2 pats.). F. L. Sattley Collars. E. H. Cooper Collar-supporter. A. M. Windrich Combination-lock. O. J. Fahey Composition of matter. F. Mlekush Composition of matter. E. S. Smith Compressing-machine. E. S. Smith Compressing-machine. E. S. Smith Concrete conveyer and distributer. G. Mingo Concrete pile-molding shell. E. D. Watt Concrete railway-tie. J. J. Breeton Concrete rilway-tie. J. J. Breeton Concrete rilway-tie. J. J. F. Curtis Conveyer. J. Opfergelt Conveyer. J. Opfergelt Conveyer. Bucket. T. A. Edison Cooker. Electrically-heated. C. E. Terwilliger Cork-extractor. J. F. Curtis Corn, Stovage system for seed. M. L. Northrup Corset. S. A. Jenyns Cottou-cleaner S. D. Murray Crank. J. N. McGriff Cream-separator and churn. A. Fay Cream-separators, Driving attachment for.	Casting steel boxes
C. A. Lewis Charging apparatus. W. A. Turbayne Churn	Cement sink constructionH. H. Jones Chain-making machine, Weldless-link
Compressing-machine. J. Baade Concrete conveyer and distributer. G. Mingo Concrete-pile-molding shell. E. D. Watt Concrete rallway-tie. J. J. Brereton Concrete structure, Reinforced. D. W. Daley Control system. R. P. Jockson Conveyer. J. Opfergelt Conveyer. Bucket. T. A. Edison Cooker. Electrically-heated. C. E. Terwilliger Cork-extractor. J. F. Curtis Corn, Storage system for seed. M. L. Northrup Corset. S. A. Jenyns Cottom-cleaner. S. D. Murray Crank. J. N. McGriff Cream-separator and churn. A. Fay Cream-separators, Driving attachment for.	Charging apparatusW. A. Turbayne
Compressing-machine. J. Baade Concrete conveyer and distributer. G. Mingo Concrete-pile-molding shell. E. D. Watt Concrete rallway-tie. J. J. Brereton Concrete structure, Reinforced. D. W. Daley Control system. R. P. Jockson Conveyer. J. Opfergelt Conveyer. Bucket. T. A. Edison Cooker. Electrically-heated. C. E. Terwilliger Cork-extractor. J. F. Curtis Corn, Storage system for seed. M. L. Northrup Corset. S. A. Jenyns Cottom-cleaner. S. D. Murray Crank. J. N. McGriff Cream-separator and churn. A. Fay Cream-separators, Driving attachment for.	Churn
Compressing-machine. J. Baade Concrete conveyer and distributer. G. Mingo Concrete-pile-molding shell. E. D. Watt Concrete rallway-tie. J. J. Brereton Concrete structure, Reinforced. D. W. Daley Control system. R. P. Jockson Conveyer. J. Opfergelt Conveyer. Bucket. T. A. Edison Cooker. Electrically-heated. C. E. Terwilliger Cork-extractor. J. F. Curtis Corn, Storage system for seed. M. L. Northrup Corset. S. A. Jenyns Cottom-cleaner. S. D. Murray Crank. J. N. McGriff Cream-separator and churn. A. Fay Cream-separators, Driving attachment for.	Clipping and polishing apparatus
Compressing-machine. J. Baade Concrete conveyer and distributer. G. Mingo Concrete-pile-molding shell. E. D. Watt Concrete rallway-tie. J. J. Brereton Concrete structure, Reinforced. D. W. Daley Control system. R. P. Jockson Conveyer. J. Opfergelt Conveyer. Bucket. T. A. Edison Cooker. Electrically-heated. C. E. Terwilliger Cork-extractor. J. F. Curtis Corn, Storage system for seed. M. L. Northrup Corset. S. A. Jenyns Cottom-cleaner. S. D. Murray Crank. J. N. McGriff Cream-separator and churn. A. Fay Cream-separators, Driving attachment for.	Clock (2 pats.)
Compressing-machine. J. Baade Concrete conveyer and distributer. G. Mingo Concrete-pile-molding shell. E. D. Watt Concrete rallway-tie. J. J. Brereton Concrete structure, Reinforced. D. W. Daley Control system. R. P. Jockson Conveyer. J. Opfergelt Conveyer. Bucket. T. A. Edison Cooker. Electrically-heated. C. E. Terwilliger Cork-extractor. J. F. Curtis Corn, Storage system for seed. M. L. Northrup Corset. S. A. Jenyns Cottom-cleaner. S. D. Murray Crank. J. N. McGriff Cream-separator and churn. A. Fay Cream-separators, Driving attachment for.	Clothes-clamp. J. W. Finch Clothes-stick. J. C. Sangers
Compressing-machine. J. Baade Concrete conveyer and distributer. G. Mingo Concrete-pile-molding shell. E. D. Watt Concrete rallway-tie. J. J. Brereton Concrete structure, Reinforced. D. W. Daley Control system. R. P. Jockson Conveyer. J. Opfergelt Conveyer. Bucket. T. A. Edison Cooker. Electrically-heated. C. E. Terwilliger Cork-extractor. J. F. Curtis Corn, Storage system for seed. M. L. Northrup Corset. S. A. Jenyns Cottom-cleaner. S. D. Murray Crank. J. N. McGriff Cream-separator and churn. A. Fay Cream-separators, Driving attachment for.	Clutch
Compressing-machine. J. Baade Concrete conveyer and distributer. G. Mingo Concrete-pile-molding shell. E. D. Watt Concrete rallway-tie. J. J. Brereton Concrete structure, Reinforced. D. W. Daley Control system. R. P. Jockson Conveyer. J. Opfergelt Conveyer. Bucket. T. A. Edison Cooker. Electrically-heated. C. E. Terwilliger Cork-extractor. J. F. Curtis Corn, Storage system for seed. M. L. Northrup Corset. S. A. Jenyns Cottom-cleaner. S. D. Murray Crank. J. N. McGriff Cream-separator and churn. A. Fay Cream-separators, Driving attachment for.	Cock. Hot and cold water. D. W. McNeil Coffee-pulper R Rahmann
Compressing-machine. J. Baade Concrete conveyer and distributer. G. Mingo Concrete-pile-molding shell. E. D. Watt Concrete rallway-tie. J. J. Brereton Concrete structure, Reinforced. D. W. Daley Control system. R. P. Jockson Conveyer. J. Opfergelt Conveyer. Bucket. T. A. Edison Cooker. Electrically-heated. C. E. Terwilliger Cork-extractor. J. F. Curtis Corn, Storage system for seed. M. L. Northrup Corset. S. A. Jenyns Cottom-cleaner. S. D. Murray Crank. J. N. McGriff Cream-separator and churn. A. Fay Cream-separators, Driving attachment for.	Coin-packagev. F. L. Sattley Coin-sorter (2 pats.) F. L. Sattley
Compressing-machine. J. Baade Concrete conveyer and distributer. G. Mingo Concrete-pile-molding shell. E. D. Watt Concrete rallway-tie. J. J. Brereton Concrete structure, Reinforced. D. W. Daley Control system. R. P. Jockson Conveyer. J. Opfergelt Conveyer. Bucket. T. A. Edison Cooker. Electrically-heated. C. E. Terwilliger Cork-extractor. J. F. Curtis Corn, Storage system for seed. M. L. Northrup Corset. S. A. Jenyns Cottom-cleaner. S. D. Murray Crank. J. N. McGriff Cream-separator and churn. A. Fay Cream-separators, Driving attachment for.	Collar E. H. Cooper Collar-supporter A. M. Windrich
Compressing-machine. J. Baade Concrete conveyer and distributer. G. Mingo Concrete-pile-molding shell. E. D. Watt Concrete rallway-tie. J. J. Brereton Concrete structure, Reinforced. D. W. Daley Control system. R. P. Jockson Conveyer. J. Opfergelt Conveyer. Bucket. T. A. Edison Cooker. Electrically-heated. C. E. Terwilliger Cork-extractor. J. F. Curtis Corn, Storage system for seed. M. L. Northrup Corset. S. A. Jenyns Cottom-cleaner. S. D. Murray Crank. J. N. McGriff Cream-separator and churn. A. Fay Cream-separators, Driving attachment for.	Composition of matter
Concrete-pile-moiding shell. E. D. Watt Concrete railway-tie. J. J. Brereton Concrete structure, Reinforced. D. W. Daley Control system. R. P. Jockson Conveyer. J. Opfergelt Conveyer. Bucket. T. A. Edison Cooker. Electrically-heated. C. E. Terwilliger Cork-extractor. J. F. Curtis Corn, Storage system for seed M. L. Northrup Corset. S. A. Jenyns Cottom-cleaner S. D. Murray Crank. J. N. McGriff Cream-separator and churn. A. Fay Cream-separators, Driving attachment for.	Compressing-machineE. S. Smith
Concrete railway-tie	Concrete-bile-molding shellE. D Watt
Control system. R. P. Jockson Conveyer. J. Opfergelt Conveyer. Bucket. T. A. Edison Cooker. Electrically-heated. C. E. Terwilliger Cork-extractor. J. F. Curtis Corn, Storage system for seed	Concrete structure, Reinforced.D. W. Daley
Conveyer, Bucket. 1. A. Edison Cooker, Electrically-heated, C. E. Terwilliger Cork-extractor. J. F. Curtis Corn, Storage system for seed M. L. Northrup Corset. S. A. Jenyns Cottou-cleaner S. D. Murray Crank. J. N. McGriff Cream-separator and churn. A. Fay Cream-separators, Driving attachment for O. F. Kohlwev Crutch. S. J. Trask Cultivator attachment. D. D. McMillin Cultivator, Sled- L. E. Waterman Culvert. G. A. Sagendorph	Conveyer Project Space Project Conveyer Conve
Corn, Storage system for seed. M. L. Northrup Corset	Cooker, Electrically-heated C. E. Terwilliger Cooker tractor
Corset S. A. Jenyns Cottou-cleaner S. D. Murray Crank J. N. McGriff Cream-separator and churn A. Fay Cream-separators, Driving attachment for. O. F. Kohlwev Crutch S. J. Trask Cultivator attachment D. D. McMillin Cultivator, Sled-L. E. Waterman Culvert G. A. Sagendorph	Corn, Storage system for seed
Crank J. N. McGriff Cream-separator and churn A. Fay Cream-separators, Driving attachment for O. F. Kohlwev Crutch S. J. Trask Cultivator attachment D. D. McMillin Cultivator, Sled-L. E. Waterman Culvert G. A. Sagendorph	Corset
Crutch. S. J. Trask Cultivator attachment. D. D. McMillin Cultivator, Sled L. E. Waterman Culvert. G. A. Sagendorph	Crank. J. N. McGriff Cream-separator and churu. A. Fay
Cultivator attachmentD. D. McMillin Cultivator, SledL. E. Waterman CulvertG. A. Sagendorph	Cream-separators, Driving attachment for O. F. Kohlwev Crutch
Culvert	Cultivator attachmentD. D. McMillin Cultivator, SledL. E. Waterman
	Culvert

THE INVENTIVE AGE.

Curling-iron, ElectricalG. W. Bibbens Curtain-fastenerC. L. Bair Curtain-rodL. J. Wilbert CuspidorA. Bajluk Cut-out, Meter-testing service.T. E. Murray Cutting-toolB. Goodman
Cuspidor A. Bajluk Cut-out, Meter-testing service. T. E. Murray
Dental forceps. J. B. Hull Dental-instrument holding and sterilizing bracket-table. L. A. Kent et al. Detector-bar. A. C. Livermore
bracket-tableL. A. Kent et al. Detector-barA. C. Livermore Detector-barE. Reid
Detector-bar E. Reid Die-stock L. F. Hart Die-stock reaming attachment F. Saville Disk support
Die-stock reaming attachment. F. Saville Disk-support. L. E. Waterman Display-rack. A. E. Miller Distining apparatus. H. Hirzel Loor check and closer. J. C. Regan
Door check and closer. J. C. Regan Door-fastener. J. E. Miuor Door, Grain A. G. Christopherson
Door-lock, Automatic safetyJ. W. Huline Drill controller, ElectricW. O. Duntley Drinking-cupS. O. Roseufeld
Egg-heater W. Dupre Electric-conduit ontlet-boxes, Porch-recep- tacle for C. S. Homsher
Electric cut-outT. E. Murray Electric detonator and exploder
Electric reciprocating engine. W. A. Stedman
Electrical brush or collector, Flexible R. H. Barbour Electrical connectionS. Sedoff
Electrical distribution system. R. M. Palmer Electrical distribution system (9 pats.) W. A. Turbayne
Display-rack A. E. Miller Distming apparatus H. Hirzel Door check and closer J. C. Regan Door-fastener J. E. Miuor Door, Grain A. G. Christopherson Door-lock, Automatic safety J. W. Hinline Drill controller, Electric W. O. Duntley Drinking-cup S. O. Roseufeld Egg-heater W. Dupre Electric-conduit ontlet-boxes, Porch-receptacle for V. S. Homsher Electric cut-out T. E. Murray Electric detonator and exploder. R. H. Renuie et al. Electric reciprocating engine W. A. Stedman Electrical brush or collector, Flexible. R. H. Barbonr Electrical distribution system R. M. Palmer Electrical distribution system (9 pats.) W. A. Turbayne Electrical variatious, Means for reproducing P. C. Hewitt Electrolysis, Multiple-needle holder for Elevator S. L. Goldman Embankment-protector R. R. Toennes Embroidering-machiue shuttle mechanism.
E. W. Johnson Elevator. S. L. Goldman
Embankment-protector
Embroidering-machine stopping-gear
End-gate fastenerA. D. Wagner Engine-starting device, GasA. B. Fowler Engine-starting device, GasG. B. Petsche Engine-starting mechanism, Gas
Engines, Cylinder-saddle for locomotive
Engine-starting mechanism, Gas
articles, Apparatus forK. Schwahn Envelop-machineW. C. Briggs
Escapement-wheel
Excavating and separating apparatus
Explosive C. E. Griffing Explosive G. M. Peters et al.
Fabrics and threads therefor, Making W. H. Bush
Fan W. F. Primley et al. Fan and pump, CeutrifugalG. M. Capell Farming implementC. Stewart
Fastener J. Battenfeld Fasteners, Screw-stud for snap
Excavating and separating apparatus. O. B. Perry C. E. Griffing Explosive. G. M. Peters et al. Eyeglass-receptacle. G. J. Kirby Fabrics and threads therefor, Making W. H. Bush Fan. W. F. Primley et al. Fan and pump, Ceutrifugal. G. M. Capell Farming implement. C. Stewart Fastener. J. Battenfeld Fasteners, Screw-stud for snap- H. Kerngood Fastening device. J. Kennedy Feed-regulator for boilers, Automatie. F. E. Gould Feed-water de-aerator. E. Kuhne Feeder and loader. H. W. Hinderlifter Feeder, Automatic. F. Persans Fence post. J. Hicks
Feed-water de-aerator. E. Kulme Feeder and loader H. W. Hinderlifter Feeder, Automatic F. Persans
File, Account
File, Prescription J. D. Mulloy Filing-machine P. Barry
File-box
Fire-alarm, ElectricA. C. Farley Fire and water tube boiler, Combined L. Haubentaller
Fire-extingnisher
C. Walther Fireproof box for powder-cans. J. Rauth Fish, Preserving. R. Marot
Fire-hydrant (2 pats.). J. Knickerbacker Firearm with stationary barrel, Antomatic C. Walther Fireproof box for powder-cans. J. Ranth Fish, Preserving. R. Marot Flue-scraper. J. S. Park Flying-machine. A. T. Newbury Fluid-regulator. Pressure controlled
E. P. Noyes Flying-machine. G. S. I'dstad
Folding chair. I. M. Doehrer Food, Making animal. R. Stock
Form adjustment, Dress J. Rae Form, Dress J. V. Kearns Form, Dress (2 pats.) J. Rae
Forms of bodies, Apparatus for reproducing the V. Storti Fumigating apparatus T. H. Hood
Flying-machine A. T. Newbury Fluid-regulator, Pressure controlled. E. P. Noyes E. P. Noyes Flying-machine G. S. I'dstad Folding box. L. W. Draper Folding chair. J. M. Doehrer Food, Making animal R. Stock Form adjustment, Dress- J. V. Kearns Form, Dress- J. V. Kearns Form, Dress (2 pats.) J. Rae Forms of bodies, Apparatus for reproducing the V. Storti Fumigating apparatus. T. H. Hood Furnace W. Buchanan Furnace-walls, Means for bracing. J. Thompson
Furniture-spring II. G. Price Fuse-case T. E. Murray Fuse case Fluctric T. F. Murray
Finse, Electric. T. E. Murray Game apparatus. F. Deerherg
Furnace-walls, Means for bracing J. Thompson Furniture-spring J. Thompson II. G. Price Fuse-case T. E. Murray Fuse case, Electric T. E. Murray Fuse, Electric T. E. Murray Fuse, Electric T. E. Murray Game apparatus F. Deerberg Garbage-receptacle M. K. Bunn Gas-burner Gas-burner for dental tables T. Smith Gas-engine Convertible two to four cycle
Gas-engine, Convertible two to four cycle C. F. Hopewell Gas-heater
C. F. Hopewell Gas-heater W. Akin Gas-meter stuffing-box A. B. Morton Gas or combustion engine L. Woodworth Gas or oil engine L. Woodworth Gas-prospore angulator C. M. Teit
Gas-pressure regulator. G. M. S. Ta't Gas-producer. H. C. Perdne Gases and preparing char-peat, Treating blast-furnace. B. Loomis
blast-furnaceB. Loomis
Gases for rapidly freeing them from dust or smoke held in suspension therein. WashingP. Kestaer

Gases, Production of reactions in	
Gear-cutting machineC. E. Bilton Gearing, Antomatic reversible.	
Gases, Production of reactions in	
Glasses, Shooting (Reissue)C. E. Cook Grain-binders for stooking sheaves of grain,	
Attachment toA. T. Giles Grain-dividerC. A. A. Rand Graphophone-needles, Tool for	
Grinding-machineE. W. Mitchel Grinding-machine, Emery-wheel	
G. E. J. Jobin Guns, Sheil-ejector forF. T. Russell Hammers, Throttle control for fluid-op	
eratedl. F. Zwiker Haud-bag, Lady'sL. M. Trask Hardening and tempering apparatus	
Grain-binders for stooking sheaves of grain, Attachment to	
Harvester, GrainC. A. A. Rand Harvester reelK. Van Kooy Hav-pressJ. G. Hale	
Hay-rack brace and stayD. H. Rinehart Deadlight-controlling deviceC. A. Moberg Headlight-operating mechanism. Automatic.	(
Hinge G. H. Herrick Hinge B. J. Aurand Hinge, Wind-shield H. W. Rodenbeck	
Hinge G. H. Herrick Hinge B. J. Aurand Hinge, Wind-shield II. W. Rodenbeck Hobby-horse, Rein-driven pedal-propelled . F. Magee Hod T. I. Walsh Hoe-clamp E. D. Nugent Hoisting apparatus J. W. Hammond et al. Hoisting apparatus A. E. Norris	
Hoe-clampE. D. Nugent Hoisting apparatusJ. W. Hammond et al. Hoisting apparatusA. E. Norris	
Hoisting apparatus. A. E. Norris Hoisting-apparatus brake. J. A. Shepard Boisting device. A. E. Norris Hook and eye. L. Feingold	
Horseshoe J. H. Kieffer Hose-coupling W. J. Rolle Hose-protector P. A. Dinardo	
Hoisting device. A. E. Norris Hook and eye. L. Feingold Horseshoe. J. H. Kieffer Hose-coupling. W. J. Rolle Hose-protector. P. A. Dinardo Hub-attaching device. A. G. Murphey Hypodermic-needle protector. J. Payne Igniter. E. P. Du Pont Igniter. Sparking. L. H. Wattles Ignition apparatus, Electrical A. H. Crocker Ignition device, Electric. A. R. Mosler	
Igniter, Sparking,, L. H. Wattles Ignition apparatus, Electrical A. H. Crocker Ignition device, Electric A. R. Wosler	
Ignition apparatus, Electrical A. H. Crocker Ignition device, Electric A. R. Mosler Indicator E. F. Vallilee et al. Induction-motor I. De Kaiser Injector, Steam R. G. Brooke Ink-distributer A. E. Berreyesa Insulating-board S. Cabot Internal-combustion engine I. A. Giles	
Ink-distributerA. E. Berreyesa Insulating-boardS. Cabot Internal combustion engine 1 A. Giles	
Internal-combustion engineL. Woodworth	
Isoprene, Manufacturing, W. II, Perkin et ai. Jar-closures, Device for manipulating P. Cole	
Knob-spindle fastener J. Powers Lace cap, Shoe O. Knehner Lacer Shoe J. J. Thomas	
LadderJ. L. White Lamp adjustable support, Vapor S. E. Flichtner	
Isoprene, Manufacturing, W. H. Perkin et al. Jar-closures, Device for manipulating P. Cole Jarring-machine	
Lamp support and reflector, Glow C. H. Sharp Lamp, TiltingF. II. von Keller	
Lamps, Apparatus for igniting miners' safetyE. A. Hailwood Lamps, &c., Apparatus for testing miners'	
SafetyE. A. Hailwood Land-rollerD. W. McConnell LanternW. S. Hamm et al.]
Lantern, Reserve emergency-, W. H. Adams Latch, Freight-car-door,C. F. Tifft et al. Latch, GateJ. J. Warns	
Laundry-markerJ. D. Caldwell Lead pigment and makingA. S. Ramage Lemon-squeezerL. A. Billman et al.]
Lever-locking deviceT. Fawcus Lever, UnconplingJ. B. Augustus Life-saving device for street-cars]
Lightning-arrester, Automatic fusible A. Reid	
Liquid-fuel-control-systemG. T. Hauchett Lithographic stones or metal plates, Pro- ducing substitutes forH. Christensen]
Loading and dumping deviceT. J. Byler Loading and unloading apparatus E. Barrett]
Lock. S. D. Polsen Locking means, ClosureC. J. Ljunggren Locomotive ash-panW. E. Wine]
Locomotive, ElectricW. Cooper Locomotive, ElectricN. W. Storer Locomotive-engineF. J. Cole et al.	l
Log-damW. J. Griffith LoomA. Handschin et al. Loom shuttle-controlling means, Automatic.	
Loom shuttle-motionM. O. Steere LubricatorJ. F. MacIndoe	I
LubricatorJ. R. W. Menger LubricatorG. Kraft Mail-bag and parcel receiving aud deliver-]
ing apparatusA. M. Clark Mail-bag catcher and deliverer W. T. Gulledge	
Landry-marker. J. D. Caldwell Lead pigment and making. A. S. Ramage Lemon-squeezer. I. A. Billman et al. Lever-locking device. T. Fawens Lever, Unconpling- J. B. Augustus Life-saving device for street-cars. W. H. Martin Lightning-arrester, Antomatic fusible. A. Reid Liquid-fuel-control-system. G. T. Hauchett Lithographic stones or metal plates, Producing substitutes for H. Christensen Loading and dumping device. T. J. Byler Loading and unloading apparatus. E. E. Barrett Lock. S. D. Polsen Locking means, Closure- C. J. Linnggren Locomotive ash-pan. W. E. Wine Locomotive, Electric. W. Cooper Locomotive, Electric. N. W. Storer Locomotive-engine. F. J. Cole et al. Log-dam. W. J. Griffith Loom. A. Handschin et al. Loom shuttle-controlling means, Automatic. M. Prussak et al. Loom shuttle-motion. M. O. Steere Lubricator. J. F. MacIndoe Lubricator. J. R. W. Menger Lubricator. J. R. W. Menge]
Mail catching and delivering apparatus H. J. Hedrick Mantle supports or carriers, Holder for inverted V. H. Slinack Manure-spreader Manur	
Manure-spreader F. W. Rice Manure-spreader H. T. Inghram Measure J. A. Kimball	1
Manure-spreader H. T. Inghram Measure and gage. Skirt A. E. Lowerre Measure attachment, Tape- J. Titchell Meat-roaster J. R. McLanghlin Meat-spreader J. Standeumaier Metal tide S. J. Rilor	1
Meat-spreader. J. Standeumaier Metal tie S. L. Riley Milk and cream capsule A. E. Parent Milk, Drying (Reissue) J. R. Hatmaker	1
Milk, Drying (Reissue)J. R. Hatmaker Milking-machineA. Nihlen Milling-cutterD. Steiner	

Milling-machine
Motor-coutroller. T. E. Barmin Motor controller, Electric- F. T. Taylor Motor controller, Electric- A. J. Horton Mower, Lawn- M. Maidino Music-timing device W. J. Jackman Musical instrument A. and O. Philips Musical instrument, Mechanical
Nail-extractor G. P. Brand Necktic atachment G. L. Stevens Nippers, Cutting J. Walsh Nitric oxid from mixtures of nitrogen and oxygen, Process of and apparatus for producing H. Pauring Nitrites and nitrates, Manufacturing
Numberer, Stub- H. Pauling Numberer, Stub- W. Flett Nut-lock M. L. Shinn et al. Nut. Self-locking J. Pearson Oil-burner A. Klein Oiling device for pumps R. M. Downte Operating-knife E. Kratz Ore crusher or grinder G. Johnston Oven-door W. E. Huenefeld
Oyster dredging and manipulating machine. N.A. Lybeck Pack-opening apparatus
Paner-machines Paising felt-pross for
F. Banniug et al. Paper-sticking mechanism, Gummed- E. W. Werden Parcel-holder E. C. Hedgpeth Peeler aud sticer, Fruit and vegetable
D. A. Seligman Pharmaceutical preparation. F. von Arlt Phonograph attachment. C. A. Rumble Phonograph-reproducer. A. N. Pierman Phonograph-reproducer. C. P. Carter Phosphates, Making. H. Schroder Photographic printing-designs from varions original pictures or patterns by means of division-lines, Means for composing
A. Brandweiner Photographic tray. W. G. Rice Picker-strap A. Girard Piling, Coutractible J. C. Meem Pin-lifter M. D. Mickle Pipe-stopper F. A. K. Cook Pipe trap, Waste-water W. R. Willetts Plane, Rabbet W. Potter Planters, Adjustable seed-cell for A. M. Crisman Planting-machine J. M. Lebar Platelifter G. Seel
Planting-machine
Power-transmission apparatus
Printing-presses, &c., Sheet-delivery mechanism for R. Miehle Projectile from aerial crafts, Means for dropping R. E. Scott Pulley H. J. Gilbert Pulling-over machine A. Perri Pull-drying machine W. M. Barber
dropping I. F. Scott Pulley H. J. Gilbert Pulley A. Perri Pulp-drying machine W. M. Barber Pump W. J. Lapworth Pump. Continnous-spray H. Finzel Pump. Rotary. I. B. Humphreys Pump. Tire B. S. Coe Pump. Tire J. W. Neblett Rail and splice-bar E. Esliger Rail-joint J. Hannza Rail-joint J. Hannza Rail-joint F. Poole
Rail-joint
Rail-joint
Railway switch, Street. R. B. Woodall Railway-tie. C. W. Baeder Railway-tie fastener and brace. C. D. Loehr Railway-track construction. W. H. Conry Railway-vehicle, Electric. G. M. Eaton Rat-trap. J. A. Beverly Razor handle, Safety- L. Schwartz Razor, Safety- G. Hickman Razor, Safety- K. C. Gillette Razor, Safety- H. C. Guetschoff Razors, Device for F. H. Gross Receptacle. A. H. Hewes Receptacle. A. H. S. Swan Reel for electric cables, &c. D. J. Jorden Relay. P. Utne Releasing device for loaders and the like
Repair-sheet. T. Whilde Ribbon mechanism. C. Spiro
Road-roller (2 pats.). H. F. Crandall Roadways, Making. J. E. Ward Rocking-horse. F. Magee

	Politica larged subset Min 6.5	w1s1
5	Rolling lapped tubes, Min for J. S.	. Worth et al
ľ	Rope, chain, or wire stretche	$(X_i - 1)$ Kehe: cr (Reiss ie).
1	Rotary-amaratus feeding devi	J. S. Sourel
1	Dallan and the K.	O. S. Ther
	Ruffling and folding attachme	ut gaganga
] }	Sack-holder	Λ_i H. De Voc., C. F. Pan
	Rolling-mill. Rope, chain, or wire stretche Rotary-apparatus feeding devi K Rubber-tree-tapping knife. P. Ruffling and folding attachme Sack-holder. Sad-iron shoe. Safe or vault. Sash-fastener. J Sash, Metallic window- Saw. M. Saw-frames, Blade-clamp for, Seaffold, Portable extension-	W. G. Norris
	Sash-fastener	. II. Bobbit
l I	SawM.	W. E. Thriel W. Sizemore
	Saw-frames, Blade-clamp for, Scaffold, Portable extension-	R. Coffron
	Scale with automatically-iss	ared resords
	cards. Seed culier, Cotton	P. Meyer Bowers et id.
	Separator	.S. H. Brown
	Sewing attachment, Button	Tr Ir Li
	Sewing-machine attachment	A. H. De Voe
	Sewing-machine thread-control	Hing much, h
	Sewiug-machine work-holder Sewiug-machine work-holder W. T. Shade, Adjustable windowI Shaft-hanger Shapers, Work-holder for H. E. Ship-cleaning device Sline	Hanley of 1.
	Shaft-hanger	F. Trochille
	Shapers, Work-holder for	Merton et al.
	Ship-cleaning device	. F. Holland
	Shoe. W Shoe-lutton protector. W	. Spiegelman
	Shoe-fatton protector. Shoe-fastener. Shoe manufacture, Beading-un	l. Buckley .L. H. Heath
	Shoe manufacture, Beading-un	achine for
	Shoe or boot ventilating device	eT. Roberts
	Shoemaker's jackC.	W. Ragsdale
	Shoemaker's lightC.	M. Thompson C. D. Orcutt
	Sidewalk and vault light	E. E. Gilmer
	Sim Manual in Case	M. Hothersal
	Shoe manufacture, Beading-un Shoe or boot ventilating device Shoe-shaping device. E. Shoemaker's jack. C. Shoemaker's light. C. Shovel. Sidewalk and vault light. Sifter-top for cans or vessels. J. Sign. Advertising	t-breaker and
	Sills moighted with motel , alr	re Duoscarring
	(2 pats.)	O. Meister
	Smoke-consuming furnaceP.	J. Kraetsch
	Soldering-iron, Self-heatingA	. J. Whitheel
	Spiral rolls without mandrels,	Apparatus for
	spring R. D. e	.C. 1. Shirley Gallagher, Jr
'	Spring constructionT. Square, Knockdown carpenter	. L. A. Adlei 's.J. L. Noble
	Stamp, Time	F. Purdy Wasson et al
	Stanchion, Self-closing	.H. H. Reed
	C2 pats.). Slip-socket. Smoke-consuming furnaceP. Solar-heat motor E. Soldering-iron, Self-heating A. Speedometer. Spiral rolls without mandrels, making. Spring. R. D. Spring construction. T. Square, Knockdown carpenter. Stanchion, Cattle C. W. Stanchion, Self-closing. Starch, Preparing. Steam-generator. J. H. Ros Steam-generator or humidifier Steering-gear. Stone, Artificial.	senthal et al.
	Steam-generator of Indudante	B. Holliday
	Stone, Artificial	R. E. Brand
	Store Artificial G. Stove L. Stove Combined gas and solid-	A. Malmgren
	Stove	. E. Clawson fuel burning.
	Stove-door	C. R. Cahoone F. Ostrander
	Stove, Combined gas and solnd- E Stove-door. L. Stove, Lamp Stove safety attachment, Gas	M. G. Mason
	Strainer or sond valve	G. Lawrence
	Sweater P	Rautenberg
	Switch-operating apparatus Switch-operating device, Elect	rie
	Switch-operating mechanism.	lenrard et al. Automatic
	Switch throwing and locking	Ralph et al.
	Syringe Pocket- D. N.	Buras et al.
	Tablet, Loose-leaf	E. Thompson
	Telegraphic relay	I. Kitsee
	Telephone-call distinguisher	.K. W. Gale
	Telephone system, Automatic.	V. Alexeeff
	Tilling-machine frame	.G. Spalding
	Tire grip-tread, Vehicle	C. J. Ohlsson
	Tire-protector.	H. A. Mielke
	Tire, Quick-detachable wheelL	H. Lamkin
	Tire-shoe-building apparatusR. 1	Rowley et al.
	Tire, Vehicle-wheel	M. Clark L. A. Clement
	Tobacco-moistening deviceF.	W. Henschel
	Toggle-bolt	J. Clements
	Tomb for receiving commsF. and J	. Skowronski
	Sweater. Switch-operating apparatus. Switch-operating device. Elect B. B. B. Switch-operating mechanism. P. C. Switch throwing and locking Syringe, Pocket. Talking-machine sound-box. Telegraphy. Telephone-call distinguisher. Telephone system, Automatic. Tile-laying machine. Tille-laying machine. Tille-laying machine. Tilre-protector. Tire, Pneumatic. Tire, Pneumatic. P. Tire-protector. Tire, Quick-detachable wheel- L. Tire-shoe-building apparatus. R. I. Tire, Vehicle-wheel Tobacco-feeding device. L. Tobacco-moistening device. L. Tongs-building coffins. F. and J. Tongs. Tongue-supporting device. T. I. Tool. Combination- Tool. Combination- Torch.	Loudermilk
	Tool, Combination	.J. Schneider A. P. Johnson
	Torch	O. Bartel F. Dutcher
	Tourist's harness or pack-bag.	A. W. Carlson
	Toy, Automatic	O. L. Lewis
	Toy, Locomotive Toy, Mechanically-operated	.D. P. Clark .D. P. Clark
	Track-sanding device	J. Gapp .J. S. Flfers
	Tread, SafetyT	C. P. Farmer H. Howard
	Tool. Combination— Tool. Combination— Torch. Torpedo-cases. Making fiber Torpedo-cases. Making fiber Toy, Aerial projectile. Toy, Automatic. Toy, Locomotive. Toy, Mechanically-operated. Track-sanding device. Track-sanding device. Tread. Safety— Trolley. Trolley. Trolley. Trolley-guard. Trolley-pole-operating means.	.V. Pedersen
	Trolley-pole-operating means	trollon of al
	/Continued in July Num	trange et all.

An Irresistible Bargain

\$1.75 Value for Only \$1.15

ALL FOR ONLY \$1.15

One Year's Subscription for McCall's Magazine, Any 15-Cent McCall Pattern you may select, One Year's Subscription for the Inventive Age

McCall's Magazine

Is a large, artistic, handsomely illustrated hundred-page monthly magazine. It contains sixty new Fashion Designs in each issue. Every woman needs it for its up-to-date fashions, entertaining stories and complete information on all home and personal topics. Over one million subscribers. Acknowledged the best Home and Fashion Magazine. Regular price, 5 cents a copy. Worth double.



McCall Patterns

So simple you cannot misunderstand them. Absolutely accurate. In style, irreproachable. You may select, free, any McCall Pattern you desire from the first number of the magazine which reaches you. Regular price, 15 cents.

The Inventive Age.

A journal of manufacturing industry and scientific progress. The indispensable paper for patentees. Contains matter and information not found elsewhere. Regular price, \$1.00 per year.

DON'T MISS THIS EXTRAORDINARY OFFER.

Address: THE INVENTIVE AGE Publishing Co., Washington, D. C.

The DIAMOND

SELF-FILLING AND SELF-CLEANING

Fountain Pen.

IT IS AWAY AHEAD
OF ANY OTHER PEN
MANUFACTURED BECAUSE OF ITS SELFFILLING AND SELF-

CLEANING FEATURES.





No Soiled Fingers.

No Lost Time.

Price \$2.00.

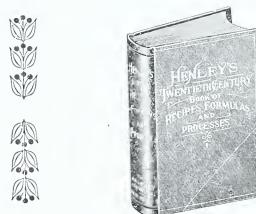
Including one year's subscription to "The Inventive Age."

Address

INVENTIVE AGE PUB'L. COMPANY, WASHINGTON, D. C.

HENLEY'S TWENTIETH CENTURY BOOK OF

Recipes, Formulas & Processes





Binding \$4.00 Half Morocco Binding 800 large Octavo (6 x 9½) Pages.

Contains over 10,000 Selected Scientific, Chemical, Fechnological, and Practical Recipes and Processes,

Including Hundreds of so-called Trade Secrets for every business.

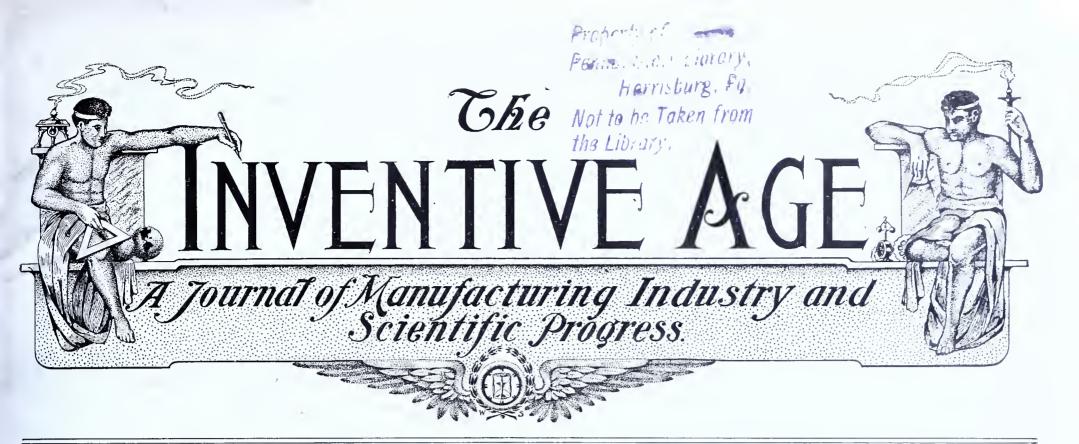
This is THE BOOK everyone should have at his command who seeks FRACTICAL, ACCURATE KNOWLEDGE and GUIDANCE in his every-day work, as no book has ever been published which so fully meets the multifarious requirements of the factory, the workshop, the laboratory, and the household. In preparing the work for so exacting and numerous a class of readers the Editor has exerted every effort to present only information which is practical, accurate and modern.

Address

INVENTIVE AGE PUB'L. COMPANY WASHINGTON, D. C.

SEND FOR OUR FREE CATALOGUE OF BOOKS FOR INVENTORS AND MECHANICS.

Address: THE INVENTIVE AGE PUBL'G CO., 918 F St., Washington, D. C.



Vol. XXIII. No. 7. }

WASHINGTON, D. C.--JULY 1, 1911.

SINGLE COPIES 10 CENTS.
ONE DOLLAR A YEAR.

CLAY=CUTTING HYDRAULIC DREDGER.

By C. VAN LANGENDONCK.

THE accompanying photograph shows, in operation on the Upper White Nile, a new hydraulic dredger offering several interesting features. The vessel is designed to make wide cuts in the bed of the river, and to deposit the spoil on the banks through a floating pipe-line having a suspended shore discharge. The hull is of steel, approximately rectangular in plan and section, 162 feet long by 38

vessel to cut through solid ground when necessary.

Two steel spuds, or vertical anchors, are fixed in slides near the stern, each having a sharp point on the bottom, which holds in the ground and constitutes the anchorage for the vessel. The latter is caused to oscillate from one side to the other upon one of these spuds as a pivot, by means of side lines carried out from the forward end of very complete and substantial description. The vessel is propelled by a stern paddle wheel driven hy horitype. The underbody of the hull is shaped or cut away forward and aft to facilitate propulsion, but it is designed more for stationary dredging-work than for navigation. Suitable steering gear is arranged on the upper deck forward, where are also of rubber or leather sleeves. The

number of flexibly-connected floating sections, and a terminal pontoon, from which the end of the pipe is suszontal compound engines of the usual pended. The overhang of the suspended portion may be as much as 200 feet if required, (see cut) so that the spoil may be put well back in marshy places. The flexible joints are of a new type, an all-metal selfpacking ball-joint, avoiding the use



CLAY-CUTTING HYDRAULIC DREDGER IN SERVICE ON THE RIVER NILE.

feet beam. The machinery is mounted on the main deck and in the hold, the two upper decks being divided into accommodation for the officers and crew. A heavy steel suction frame is mounted in front, upon the end of which is fitted a powerful rotary cutter adapted for dealing with stiff clays and heavy soils as well as with softer material. The suction frame projects sufficiently in front to enable the and attached to the shore. The cutter makes a lateral cut upon an arc of a circle, and has a clear swing from side to side of 150 feet: it can make a channel of this width by 25 feet in depth at one time. The main machinery consists of a centrifugal dredging-pump driven by a tripleexpansion engine of 700 horse power, together with boilers, winches, auxiliaries, cutter-driving gear, etc., all

placed the levers and signals for operating the vessel when dredging.

The accommodation for officers and crew is made especially roomy and comfortable. The entire deck space, and also the machinery space, are enclosed by mosquito-netting of oxidized bronze, twelve meshes to the inch, in interchangeable steel frames, so arranged as to be readily removable.

The discharge pipe consists of a

rotary cutter is of the Robinson improved type, and is of cast steel, with renewable cutting edges. The blades are made of special form, to cut heavy clay with as little resistance as possible, and are self-clearing. The strength of each blade is sufficient to safely withstand the strain due to encountering immovable resistances when running at full speed. This type of cutter apparatus represents the latest de-

velopment of hydraulic dredging in heavy clay soils, and the success which has attended its use will have the effect of greatly extending the field of usefulness of this kind of dredger, which has heretofore been thought adapted only for sand or soft material. The strength and digging action of the cutter-blades are fully equal to those of the buckets of the ladder type of dredger. The machine can therefore do work in any material that is adapted for hydraulic transportation through pipes, equal to that carried out elsewhere by ladder dredgers.

Possibilities of Aluminum.

Aluminum, chemists predict, may be the metal of the future. It may take the place of copper in the transmission of electricity. But from what source will it be practicable to obtain it, when the deposits of bauxite give out? Early in its history the white metal was extracted from cryolite, a complex ore brought all the way from Greenland's icy mountains. It was expensive stuff, and aluminum sold for a high price in those days. Later it was discovered that bauxite was a more convenient and accessible source of supply. Bauxite is a kind of clay, of which deposits have been found in Georgia, in Alabama, and in Arkansas. The deposits in Alabama and Georgia have already been pretty well worked out. Those in Arkansas, which are much more extensive, will last for quite awhile, but must be exhausted before very long. What shall be done then?

Bauxite is undeniably scarce. Apparently, unless the prices of aluminum are destined to soar again, other sources of the metal must be discovered. On the face of it, the problem would not seem very difficult, since all the clays contain large percentages of aluminum. Every clay bank, it might be said, is an aluminum mine. But the difficulty lies in extracting it.

In bauxite the metal occurs in the form of an oxid, and is easily separated out by summoning electricity to the aid of chemistry. But in ordinary clays it assumes the shape of a silicate, and is costly to extract. It remains. then, for some ingenious chemist to devise a process by which the silicate may be compelled to yield the metal cheaply. When this has been accomplished, the problem will be settled for all time.

Deposits of bauxite are found overlaid by surface soil to the depth of a few feet, which, being removed, discloses the ore beneath; just as is the case with the wonderful iron deposits of the Lake Superior region, which are extended like a blanket; so that, when the "overburden" has been taken away, stuff that is sixty percent or more pure metallic iron can be dug out with shovels.

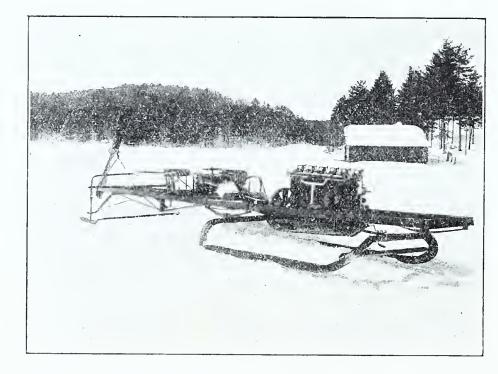
THE INVENTIVE AGE contains sound advice to inventors and patentees. For lack of such advice many have lost money. Subscription price, one dollar a year.

WIND ICE SLEIGH.

sleigh shown in the accompanying illustration is criven with an air propeller by a six cylinder 42 horsepower gasoline motor of the Franklin type. It has been operated at a speed of 77 miles per hour while plowing through an inch and half of snow over the ice. The designer, Dean Palmer, maintains that under perfect conditions on clear, smooth ice this sleigh should attain a speed of 95 to 105 miles per hour. He states that the sensation of

THE remarkable high speed wind frame by four semi-elliptic springs. The six cylinder engine is mounted on the frame of angle iron directly above the front runners, while a universal joint back of the fly-wheel takes care of an inclination of four degrees. As the engine is mounted at an angle of four degrees as well, the slope or ang'e of the shaft from the engine to the stern is eight degrees.

> It will be noted from the illustration that the driver's and passenger's seats, with the steering wheel, are



riding on it at 70 miles per hour is quite unlike that felt in an automobile at the same speed. The propellerdriven sleigh seems to fly over the ice, scarcely any jar or vibration being felt, while a feeling of exhilaration is experienced that no motorist can know.

The sleigh illustrated is built of angle iron, and consists of a front pair of runners 7 feet long, the width of the vehicle being 4 feet $8\frac{1}{2}$ inches. The runners are connected to the

mounted behind the engine with the gas tanks back of the seats. The over all length of the wind sled is 25 feet, and there are two steering rudders at the stern arranged with coiled springs. the steering apparatus being so designed that the operator is able to turn the sled around in a space of 50 feet, perfect steering control being obtained. Some remarkable tests were made at Saranac Lake, N. Y. with the motor sleigh at a high speed over the frozen surface of the lake.

Another Explosive.

That explosives sometimes produce curious effects on metal is a well known fact, but it is seldom that a hole is blown in the center of a piece of steel. To test the destructive properties of the explosive known as hathamite, an ounce of it was placed on a steel plate about an inch in thickness, the plate in turn resting upon a cylindrical piece of iron bored through the center. After the explosion, it was found that the hathamite had cut a piece out of the center of the plate the exact size of the hole beneath, indicating that the force of the explosion had been directly downward. In another test a steel conical shell was filled with the substance and exploded, the shell being blown into fragments.

Radium Banks.

A radium bank has been started in Paris, and others will shortly be opened, it is said, in London, Berlin and New York. These banks are for the purpose of lending radium, as ordinary banks lend money. A physician cannot, as a rule, afford to own any radium, for a particle as large as the point of a pin would cost will be possible to borrow what is needed for treating patients. The rental for 100 milligrams of radiumwhich is about the 300th part of an ounce, and is the right quantity for most cases—will be \$260 a day. Even at this popular price radium will hardly be within the reach of every

NEW BOOKS.

Concrete Workers Reference Books.

By A. A. HOUGHTON.

These are a series of small books, in convenient form and with paper covers, showing the various adaptations of concrete. It is the purpose of the auther in preparing these monographs to present not only the usual types of construction, but to fully explain and illustrate molds and systems that are not patented, which are equal in value to those restricted by patents. These molds are easily and cheaply constructed and embody simplicity, rapidity of operation and the most successful results in the molded concrete. Each book is fully illustrated and the subject exhaustively treated in plain English, so that all can understand the valuable ideas presented.

CONCRETE WALL FORMS.

The first of the series treats of an automatic wall clamp, superior to those on the market. The lifting of the forms causes the core mold to collapse and the outside wall molds to draw away from the concrete; when lowered into position again, the forms are automatically locked, ready for filling. This is easily made and is not patented. Other types of wall forms, clamps, etc., are described.

CONCRETE FLOORS AND SIDEWALKS.

This explains and illustrates the construction of squares, hexagonal and other forms of mosaic floor and sidewalk blocks and tiling. The construction of floor slabs, ventilated floors, etc. with reinforcement and molds for the same, is described. The subject of plain and ornamental floors and finishes is completely treated.

CONCRETE SILOS.

This gives working drawings and specifications for several styles of concrete silos, with illustrations of molds for monolithic and block silos. The concrete silo has demonstrated its superiority over all other types of silo construction, and today stands, in the opinion of practical builders, as the nearest to perfection of any type of structure for the preservation of green crops in silage. Every farmer will find the tables and information presented in this book of great value in planning this sort of building.

MOLDING CONCRETE CHIMNEYS,

SLATE AND ROOF TILES.

This treats the manufacture of all types of concrete slate and roof tiles. It gives working drawings of a simply constructed machine that is self-tamping, molding accurate reinforced concrete slabs and tile with great rapidity. This machine, which is easily a fortune; but its curative effects are built, will enable any plant to successwell recognized, and so hereafter it fully engage in the manufacture of an excellent form of concrete roofing at a low cost. The book also gives two methods of constructing forms for large monolithic concrete chimneys, as well as simple forms for building small chimneys, with a method of building the core in seven separate parts, permitting it to be removed from a course of concrete up to six

feet in height. The construction of interlocking blocks is also shown. MOLDING AND CURING ORNAMENTAL CONCRETE.

The proper proportions of cement and aggregates for various finishes, also the methods of thoroughly mixing and placing in the molds, are fully treated in this monograph. Methods of curing and remedying defects in the surface finish are explained, also ways of coating molds with a non-adhesive compound, to prevent the concrete from sticking to the surface of the mold. Instructions are given for molding imitation marble and granite with either a tool dressed surface, or with a glossy effect to imitate polished stone.

CONCRETE MONUMENTS, MAUSOLEUM AND BURIAL VAULTS.

This treatise covers the molding of a number of styles of concrete monuments to imitate the most expensive varieties of cut stone. The molds are simply built from the plain illustrations and directions given. There are also instructions for placing inscriptions, or lettering the work, as well as for cutting ornamental designs to order in concrete after it is cured. The plans for mausoleums and vaults are unlike those made with the patented systems, so that the worker can easily build the molds for the work at a slight cost in comparison with those on the market.

The Norman W. Henley Publishing Company, New York.

Drop Forging, Die Sinking and Machine Forming of Steel.

By Joseph V. Woodworth.

This is a practical mechanical work, treating subjects comprehensively, which, until now, have been ignored by writers of such books. The author states that careful search failed to show any work of value which treated thoroughly the arts of Die Sinking and Drop and Hydraulic Forging. The development of the arts and processes makes a work of this kind timely and necessary. The text of the treatise is concise, technical and ambiguous terms having been replaced by familiar shop words. The description of methods has been boiled down and digested so that the busyman can consult the book with a certainty that his time will not be wasted. The hot and cold shaping, squeezing, forming and bending of duplicate metal parts and high speed steel cutting tools by forging in drop dies, drop hammers, steam hammers, hydraulic presses and forging machines, are becoming more appreciated by the most advanced manufacturers and mechanics: but familiarity with advanced shop practice has been denied the average mechanic because of the practical lack of descriptive literature. and also because of the conservatism of experts in publishing the steps of evolution of the work. This book therefore will fill a gap in this class of publications, and will doubtless find a valuable and permanent place in its

The Norman W. Henley Publishing Company, New York.

AUTOMOBILE BOAT.

boat of great practical value for military use and for touring. As is seen from the photograph, Mr. Ravailler's invention is a self propelled vehicle which can navigate the water like an ordinary motor boat and travel overland like a motor car. The machine enters and leaves the water without any preparation or change, except in mechanical connections. When afloat, its stability is perfect: it leaves the water and climbs the bank under the impulsion of its driving wheels if the ground is reasonably firm and the grade less than 15 per cent. If the bank is steeper or softer, a rope is fastened to a stake driven into the ground, and the boat is hauled up by the capstan.

RENCH engineer, Mr.J.Ravailler, pinions, the arbors of which pass has recently devised an automobile through stuffing boxes. Three forward speeds and one backward speed are provided. Coupling, retarding and speed changing levers, a differential brake worked by a pedal, and a brake lever acting on the rear wheels complete the mechanism of propulsion on land. Steering is effected as in an ordinary motor car, by a wheel passing through a stuffing box. The variable speed driving shaft, prolonged backward beyond the rear axle, may be connected by means of a clutch with a screw propeller at the stern of the boat, the connection being made by moving a lever placed at the left hand of the driver of the vehicle. The rudder and the front axle are turned by the same steering wheel. The capstan, which is seen at the bow of the



The official tests of the boat were carried out with complete success in the presence of the representatives of the French Government, and it is believed by the War Office that this automobile boat, which has been handed over to the first regiment of engineers at Versailles, will render valuable services in scouting, and in various other ways; for instance, for taking a line across a stream so that a temporary "rope bridge" may be fixed. To tourists who will make use of the machine, canals, rivers and lakes will present no serious difficulty, as they can be crossed with ease and comfort wherever moderately gentle and smooth slopes, natural or artificial, can be found for entering and leaving the water.

The hull of the boat, which is made of steel plates riveted to steel ribs of T-shaped section, is mounted by means of springs on axles and wheels of pressed steel. The axles pass through water-tight tubes which traverse the hull. The 14-horsepower motor is placed near the bow. It drives by means of a clutch of the disk type, two distinct systems of mechanism. A variable speed shaft transmits the power to the rear or driving wheels by means of chains and

boat, is turned by a tangent screw which is driven by the motor, by means of a wheel and belt, and connected and disconnected by a loose wheel or idler. The driving wheels, the propeller and the capstan can be operated separately or simultaneously. The road speed of the machine is about 22 miles per hour, and the speed affoat is about six miles per hour. The equipment of the vehicle is completed by a pump for bailing, an anchor, a buoy and a pair of oars and movable rowlocks for use in case of accident to the motor while afloat. The transmission of the driving power from the wheels to the propeller, and vice versa, is as quick as it is simple.

How to Get Copies of Patents.

THE INVENTIVE AGE prints each month a list of the patents granted by the Patent Office. This list includes the name of the inventor, the title of the invention and the date of the patent. Anyone can procure through THE INVENTIVE AGE a copy of any patent included in the list, by giving the data and enclosing ten cents in stamps for each copy. There is no better way of keeping yourself informed about the progress of the arts than by scanning the list each month and ordering copies of patents. Running a River Under a River.

One of the remarkable features of the Yuma project of the United States reclamation service is the immense concrete siphon which will carry the water from the diversion dam under the bed of the Colorado River from California to Arizona, and irrigate over 50,000 acres of dry land. This concrete siphon, described in a recent number of Popular Mechanics, has an inside diameter of 14 feet and is in the shape of two concrete shells or caissons, one on each side of the river, extending straight down to a depth, when completed, of 150 feet. These will be joined by a tunnel running through the sandstone 100 feet below the river bed, and the volume of water which is thus carried under the Colorado would equal that of a full sized river. The intake of the siphon on the California side will be two feet higher than the outlet on the Arizona side, so that the water will rush through at the rate of eight feet per second.

In sinking this tube of concrete, a circular steel-cutting edge was used for the base of the caisson wall, and this had a beveled surface which forces the loose rock and gravel toward the center. The sandstone was blasted and the crushed rock removed by buckets. As the water became deeper it was necessary to send down a diver to do this mining work. After each blast the caisson dropped a trifle, and with the removal of the muck from the core, the massive structure gradually settled. Steel forms were clamped to the top of the caission and when it had sunk three or four feet they were unclamped, raised about the same height, clamped in place again and filled with concrete.

Music Typewriter.

After years of effort an Italian inventor claims he has succeeded in devising an "automusicograph" which is to give the composer the service a typewriter performs for the author. The device consists of a paper roll that is revolved by clockwork. The playing work of the composer at the piano is recorded on the roll in dashes of different length and on different lines, as the value or tone of the note recorded demands. After the composition has been thus recorded, the roll is detached and with a graduated scale the musician is enabled to reproduce on ordinary paper, ruled for music, the exact phrase or combination of notes he has played on the piano.

Trolley Cars as an Aid in House Wrecking.

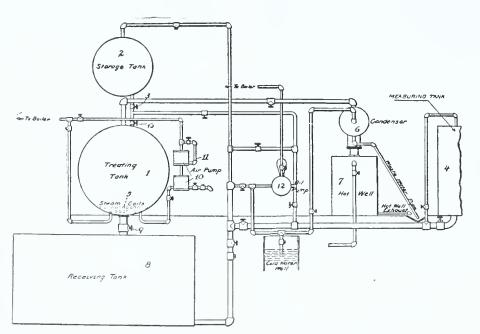
A building in New York city collapsed recently, the outer walls giving way and the upper floors crashing through to the basement. The fire and building departments tried to pull down the toppling walls, but failed, Finally they attached steel cables to the supports on the third floor, and hooking two trolley cars to the other ends of the cables, started the cars forward. Immediately the walls fell. This is, so far as known, the first instance of the use of trolley cars in wrecking houses.

CLEVER NEW PATENTS.

PROCESS OF IMPREGNATING WOOD.-EXTENSION TABLE.-DENTAL INSTRUMENT.

Process of Impregnating Wood.

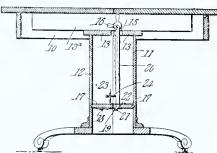
One of the serious problems which the railway companies have to face is the rapid deterioation of the woodwork of which the tracks are mainly composed. Various methods of remedying this have been tried, including the substitution of steel or concrete ties for the wooden ones, and the use of many kinds of lumber. Efforts have also been made to treat the ties with preservatives, but the expense involved in these expedients, as well as their doubtful success, have prevented their widespread employment. Charles Stowell Smith, of Berkeley, Cal., has recently invented a process of impregnating wood to be used for railway ties and other constructive purposes, which promises to be inexpensive and satisfactory. The invention, which has been dedicated to the public, applies to the treatment of green or partly seasoned or even of dried timber, and it provides an apparatus with a tank and a retort or cylinder. The ties to be treated are placed upon trucks and run into the cylinder, the doors of which are then closed so as to make the receptacle air tight. The preservative liquid, which has been kept in the storage tank, is then introduced into cylinder through valves. Any desired liquid may be used. Creosote has often been employed for this purpose, and its preservative properties are well known, for it has been used not only for woods but also as a medicine in certain forms of wasting disease. Crude oil, asphalt and soluable salts are also employed in this way, but whatever liquid is chosen, it must have a boiling point above that of water. It is heated by means of steam coils to a temperature of about 220 degrees, and this heat is maintained long enough to drive out most of the water and sap contained in



the wood. One or two hours are generally sufficient, the evaporated water and sap being condensed and drawn off for subsequent use if necessary. When most of the water has been driven from the wood, the oil or other preservative liquid is withdrawn from the cylinder or treating tack into the receiving tank, and air is pumped into the former and maintained at a pressure of 50 pounds per square inch until the pores of the wood are filled with it, which part of the process usually takes about an hour. The oil, at a temperature of 120 F., is then pumped into the cylinder, the air pressure being maintained as it was before, and the pumping continued until the pressure of the oil is raised to 157 pounds. A valve is then opened to allow the surplus oil to escape, and the compressed air within the cells of the wood expands to drive out a quantity of the absorbed oil. A vacuum may be applied to remove a further quantity of this oil. The relatively cold (120 degree) preservattive, assisted by the second pressure (157 pounds) when it comes in contact with the hot wood, causes a partial contraction of the compressed air in the cells, and thoroughly fills the latter to a depth determined by an equalization of the contained and applied pressure. When this pressure is released, the free preservative contained in the cells of the wood will be expelled, with the exception of a small amount. At the completion of the process it will be found that from 4 to 8 pounds of preservative per cubic foot of timber have been absorbed. By the addition of a lowering of temperature to the increase in pressure, much lower pressures may be utilized to obtain the the same results. The method effects a saturation of the fibers to the desired depth with the use of a comparatively small quantity of preservative. The latter can be drawn from the receiving tank back to the storage tank and used over and over again, thus greatly reducing the cost of wood impregnation.

Extension Table.

It has been found difficult, in cases where extension tables have a divided pedestal, to hold the two sections of the latter together when the table is not extended. An invention by John K. Rishel, of Williamsport, Pa. is intended to obviate this, and it is shown in the accompanying illustration, which is a vertical section. A cross bar 13 is mounted at the top of each pedestal section, and to this bar the extension slides are secured. On one of these cross bars is mounted a plate with an ear 15 to which is pivoted a lever 16. Inside the pedestal, near the bottom, are dovetailed plates 17, one in each section. To the bottom of one of these plates is secured a metal

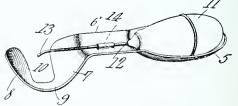


strip, the projecting portion of which has a slot 19. To the lever 16 is eccentrically pivoted a bar 20 having its free end slanted to form a wedge 21 adapted to enter the slot, the slant being in a direction to draw the two sections together when the bar is thrust downward. The bar 20 is carried by the cross bar 13 of the pedestal section 11, and the strip 18 is mounted on the plate 17 of the section 12. To regulate the draw of the wedge, a metal strip 22 is secured to the plate 17, projecting therefrom and ending in an upstanding part 23 through which is threaded a set screw 24 adapted to engage the bar 20. The projecting part of the strip 22 also has a slot through which the bar 20 loosely extends. The sections are drawn together on operating the lever 16 to thrust the bar 20 downward, and the sections are released by moving the bar in opposite direction. The set screw regulates the draw of the wedge, the pivotal connection between the bar 20 and the lever 16 permitting adjustment of the bar for this purpose. The slot 25 also guides the bar 20. The device is simple and can be ap-

Dental Instrument.

Chapin F. Lauderdale, of Lyons, Ohio, has invented a novel device which combines the usual tongue depresser used by dentists with a water dropper, intended to moisten the bur or grinding wheel when the same is in operation, thus lessening the heat generated thereby and increasing its cutting capacity. The device is for med of thin metal, and has a handle shaped like the bowl of a spoon with a shank curved to fit the mouth of a patient and intended to depress the tongue, cheek and lip during the operation. At the end of the shank is a laterally curved portion 7 terminating in a forward curve 8, these parts being reduced at their junction to form a recess which is offset from one side of the shank, the bend being from the convex side thereof, and the edges of the recess having curves instead of corners. The recess is intended to render the tooth to be operated on more readily accessible.

The water dropper comprises a rubber bulb 11 provided with a discharge tube having a laterally curved tip 13. The bulb lies in the concave portion of the handle and the tube extends along the concave side of the shank and terminates adjacent to the



recess, so that the water may be discharged therethrough onto the bar. The dropper is held in place by a sleeve 14 on the shank, through which the sleeve 12 loosely passes, so that the dropper may be adjusted or removed. The spoon-shaped handle protects the bulb, preventing the water from being ejected before wanted. The curved tip of the tube 12 may be rotated or slipped back and forth to allow the water to be dropped where desired. The handle is joined to the retractor at an angle which requires simply a rotary motion to concentrate the light on any desired place. The device is polished so as act as a reflector.

PATENTS

Send Your Business Direct to Washington Saves Time and Insures Better Service.

Trade Marks,
Copyrights
and
Designs.

plied to any table.

My office is close to the U. S. Patent Office. Personal attention given—OVER THIRTY YEARS PRACTICE. Book "How to Obtain Patents," etc., sent free. Patents procured through E. G. Siggers receive special notice, without charge, in the—

INVENTIVE AGE

Illustrated Monthly-Twenty-third Year, Terms, \$1.00 a Year,

E. G. SIGGERS,

918 F STREET, N. W., WASHINGTON, D. C.

LATEST COURT DECISIONS IN PAT-ENT. COPYRIGHT AND TRADE-MARK CAUSES.

UNION CARBIDE CO. v. AMERICAN CARBIDE CO

(Circuit Court of Appeals, Second Circuit. June 29, 1910. 181 F. R. p. 104.)

1. PATENTS - NOVELTY - CHEMICAL COM-POUND-CHANGE OF FORM.

A chemical compound in a new form may be patentable where by reason of its greater purity or efficiency or of its comparative cheapness it is made a commercial, instead of merely a laboratory, product.

2. PATENTS—VALIDITY AND INFRINGEMENT-Crystalline Calcium Carbide.

The Wilson patent, No. 541, 138, for "crystalliue calcium carbide, existing as masses of aggregated crystals," discloses patentable novelty, although calcium carbide was previously produced in laboratory experiments in an amorphous condition; the result of the patentee's discovery being a com-mercially new product of great utility. Nor is such patent anticipated by the Woehler process, published in 1862, the product of which is not shown to be crystalline, nor invalid because of prior public use for more than two years, it not being shown that such use was for other than experimental purposes. While the patent is limited to that form of crystalline carbide which exists as aggregated crystals, it is immaterial whether such crystals are perfect or imperfect; both forms being within its terms. As so construed, held infringed.

3. WORDS AND PHRASES-"CALCIUM CAR-BIDE."

Calcium carbide is a combination of calcium and carbon in the proportion of one part of calcium (Ca) to two parts of carbon (C), and is expressed in the chemical formula CaC². The principal use of calcium carbide is to make acetylene gas which is used for illuminating purposes.

UNION CARBIDE CO. v. AMERICAN CARBIDE CO.

(Circuit Court of Appeals, Second Circuit. June 29, 1910. 181 F. R. p. 111.)

PATENTS - INFRINGEMENT - PROCESS OF PRODUCING CALCIUM CARBIDE.

The Wilson patent, No. 563,527, for a process of producing calcium carbide by snbjecting lime and a carbonaceous deoxidizing agent to the heat of an electric arc in au electric furnace, held not infringed.

MURRAY CO. v. E. VAN WINKLE GIN & MACHINE WORKS.

(Circuit Court, N. D. Georgia. June 2, 1910, 181 F. R. p. 111.)

PATENTS - INFRINGEMENT - FEEDER FOR COTTON GIN.

The Murray patent, 472,607, for an improvement in apparatus for elevating, distributing, and feeding seed cotton to gins, the novel feature of the combination being an automatic valve produced by the cotton itself which prevents choking in the chute, held not infringed upon evidence showing that the patented combination will not work successfully without the use of a trip valve, which has been added as a new element in defendant's machine

WELSBACH LIGHT CO. v. COHN.

(Circuit Court, S. D. New York, June 21, 1910. 181 F. R. p. 122.)

-MACHINE FOR MAKING INCANDESCENT MANTELS.

The Von Bultzingslowen patent, No. 638,-004, for a machine for making incandescent mantles, was not anticipated and discloses invention, the machine being very successful and of substantial value; also, held valid as against the claim that the patentee was not the inventor, and infringed.

2. PATENTS - ANTICIPATION - UNUSED MA-

One who invents and constructs a machine, but permits it to slumber, and neither applies for a patent nor makes any public use of it, cannot resort to such invention as an anticipation of a subsequent patent obtained by another.

3. PATENTS-ASSIGNMENT-EFFECT AS ESTOP-

One who becomes a stockholder in a corporation organized for the purpose of taking title to a patent, and selling the same, and who participates in such sale and receives his share of the profits, is estopped to attack the validity of the patent as against an innocent purchaser for value.

4. PATENTS—ANTICIPATION—APPLICATIONS PENDING AT SAME TIME.

An inventor having two applications for patents pending at the same time, both of which disclose his invention, may base his broadest claims on the one which he considers shows the best form of mechanism, although it may be the later application, and the patent issued thereou will not be anticipated by a later patent issued on his earlier application.

5. PATENTS — ASSIGNMENTS — FORMAL RE-QUISITES.

Patents are creatures of the federal statute, and an assignment is sufficient if it conforms to the requirements of Rev. St. § 4898 (U. S. Comp. St. 1901, p. 3387), regardless of the state statutes.

6. PATENTS - SUIT FOR INFRINGEMENT -LACHES.

The fact that the owner of a patent permitted a suit for its infringement to be dismissed without a trial on the merits is not such laches as to bar a second suit against the same defendant.

HARFORD et al. v. MOORE et al.

(Circuit Court, S. D. New York. June 20, 1910. 181 F. R. p. 132.)

1. PATENTS—INVENTION-ADAPTING OLD DE-VICE TO NEW USE.

A patent is not void as for a new use of an old thing, unless the old device can be used for the new purpose without material modification or change, and a very slight modifi-cation is often the result of a wholly new conception and invention.

2. PATENTS-INVENTION-ADAPTING OLD DE-VICES TO NEW USE.

Novelty of selection of old devices or elements, remote in structure and purpose, for a new use, may evidence patentable inven-

3. Patents—Infringement—Shock-Absorber.

The Truffault reissue patent. No. 12,437. (original No. 695,508), for a shock absorber for spring-supported vehicles, used extensively on motor cars, was not anticipated, and discloses patentable invention; also held infringed.

BYERLEY v. SUN CO.

(Circuit Court, E. D. Pennsylvania. July 15, 1910. 181 F. R. p. 138.)

1. PATENTS-VALIDITY AND INFRINGEMENT -Asphaltic Petroleum Products and PROCESS OF MAKING SAME.

The Byerley patent, No. 524,130, for a process of making asphaltic products from the residuum of petroleum after distillation and for the product itself, called "Byerlyte, as a new article of manufacture, was not anticipated and discloses invention, the product being one of utility which has become widely known and used; also held in-

2. PATENTS-SUIT FOR INFRINGEMENT-DE-FENSES-LACHES.

The defense of laches to a suit for infringement of a patent held not sustained.

3. Trial — Introduction of Evidence— EXHIBITS.

Documents or other things produced by a witness on request in his cross-examination and marked for identification are not before the court as evidence, unless offered and admitted as such.

1. PATENTS-VALIDITY AND INFRINGEMENT LANGAN V. WARREN AXE & TOOL CO. (Circuit Court, W. D. Pennsylvania, June 25, 1910. 181 F. R. p. 143.)

> 1. Patents — Construction — Effect of PROCEEDINGS IN PATENT OFFICE.

> A patentee, who canceled all the original claims in his application on objections by the Patent Office, and substituted a new claim which was allowed, is estopped to claim a construction of such claim which would make it equivalent to those canceled. 2. PATENTS-INVENTION-AGGREGATION OF

OLD DEVICES-GRAB HOOK.

The Langan patent, No. 595,181, for a grab hook used for skidding logs, is for an aggregation of an old form of grab hook with an old draft device, for which no novelty was

claimed, by means which involved nothing patentable, and is void for lack of novelty and invention.

EAGLE WAGON WORKS v. COLUMBIA WAGON CO.

(Circuit Court, E. D. Pennsylvania, Aug. 3, 1910. 181 F. R. p. 148.)

1. PATENTS--INVENTION-NEW COMBINATION OF OLD ELEMENTS.

A new combination, with a new mode of operation, may be invention, even if all the parts thereof are old, and even if the function of the combination is also old.

2. Patents - New Combination of Old ELEMENTS-EVIDENCE OF INVENTION.

While a new combination of old elements often appears simple, where there was a prior defect which was thereby overcome, and the new device was immediately recog nized. and went into extensive and general use, it is persuasive that more thau mechanical skill was required in bringing together the elements in such a combination to each other as to bring about the success.

3. PATENTS - VALIDITY AND INFRINGEMENT -DUMP WAGON.

The Van Wagenen patent, No. 699,262, for a dump wagon, while for a combination of old elements, obviates prior defects and discloses patentable invention. Also held infringed by the device of the Garrison patent, which, if it contains patentable novelty, is for an improvement only in one element of the Van Wagenen combination.

PHŒNIX KNITTING WORKS v. BRADLEY KNITTING CO. et al.

(Circuit Court, E, D. Wiscousin. June 15, 1910. 181 F. R. p. 163.)

1. PATENTS-PATENTABILITY-DESIGNS.

A design is patentable if it presents to the eye of the ordinary observer a different effect from anything that preceded it, and renders the article to which it is applied pleasing, attractive, and popular, even if it is simple, and does not show a wide de-parture from other designs, or if it is a combination of old forms.

2. PATENTS - NOVELTY - PRESUMPTION AND BURDEN OF PROOF.

A patent is prima facie evidence of novelty, and a party seeking to overthrow the presumption in its favor must make a case so persuasive as to leave no room for doubt or controversy.

3. Patents - Infringement - Design for NECK SCARF.

The Mead design patent, No. 39,347, for a design for a neck scarf, was not anticipated and discloses patentable novelty; also held

PHŒNIX KNITTING WORKS v. GRUSHLAW.

(Circuit Court, E. D. Pennsylvania, Aug. 22, 1910. 181 F. R. p. 166.)

1. PATENTS-PATENTABILITY-DESIGNS.

A design, to be patentable, must be new and original, but this requirement does not preclude the selection and adaptation of an existing form, provided it is more than the exercise of the imitative faculty and the result is in effect a new creation producing a different effect on the eye of the ordinary observer.

2. PATENTS—INFRINGEMENT—DESIGN FOR NECK SCARF.

The Mead design patent, No. 39.347 for a design for a neck scarf, held not anticipated, valid, and infringed, on a motion for a preliminary injunction.

AMERICAN LEAD PENCIL CO. v. L. GOTTLIEB & SONS.

(Circuit Court, S. D. New York, July 22, 1910. 181 F. R. p. 178.)

1. TRADE-MARKS AND TRADE-NAMES-IN-FRINGEMENT.

The trade-mark "Knoxall," as applied to lead pencils, constituted an infringement on the phrase "Beats-All" previously used on pencils by complainaut.

2. TRADE-MARKS AND TRADE-NAMES-SIMIL-ARITY-INFRINGEMENT.

Whether trade-mark infringement exists does not depend solely on similarity to the eye or ear, but on whether there is such similarity as readily leads the mind of customers to confusion.

JACKSON CUSHION SPRING CO. v. D'ARCY.

(Circuit Court of Appeals, Sixth Circuit. Jnne 13, 1910, 181 F. R. p. 340.)

PATENTS - INFRINGEMENT - SPRING STRUCTURES.

The D'Arcy patent, No. 785,410, for an improvement in spring structures, claim 2, which covers a wire clip for securing spiral springs to a wire frame in spring structures in upholstry constructions, consisting of a wire bent into a double loop with a central and two end arms, each of which is clamped around both the frame wire and spring, while valid, is not of a broad and primary character in view of the prior art, but for a secondary improvement only, and must be limited to the precise construction shown and described in the specification and drawings, with the respective innctions of the arms and bases as therein shown, and to a correspondingly narrow range of equival-As so construed held not infringed.

ELLIOTT & CO. v. YOUNGSTOWN CAR MFG. CO.

(Circuit Court of Appeals, Third Circuit. Aug. 30, 1910. 181 F. R. p. 345.)

1. PATENTS-INVENTION-ENLARGEMENT OF USE IN SAME ART.

Photography and blue printing are simply different phases of the art of light printing, and the merc transfer of a device used in one to the other does not involve patentable invention.

2. Patents - Validity and Infringement-BLUE PRINT MACHINE.

The Fullman patent, No. 771,774, for an apparatus for copying drawings (a blue print machine), which consists of an upright glass cylinder around which are wrapped the drawing and sensitized paper, an arc light which is lowered into the cylinder by a clockwork mechanism, and an automatic cut off for extingnishing the light when it reaches the bottom, was anticipated in the prior art in all respects except in the specific means shown for effecting the antomatic cut-off. Claims 1, 2, 3, and 5, which claim such means broadly, are void for anticipation. Claim 4, which is limited to the particular means described in the specification, held valid, but not infringed.

3. Patents—Presumption in Favor of—When NOT INDUIGED.

The ordinary presumption in favor of a patent, because of the action of the Patent Office in allowing it, is not to be indulged, where controlling references were not cited or considered in that connection.

4. PATENTS - RECOGNITION BY THE PUBLIC-Consideration to be Given to.

The recognition of the patent by the public, as where it has been bought up under the advice of counsel, instead of being contested, or where licenses have been taken out or infringement discontinued on the failure to negotiate for them satisfactorily, are matters which are entitled to consideration ou the subject of invention, but are of no significance against an adverse showing.

5. Patents — Interference Proceedings -Effect of on Subsequent Litigation.

The result of interference proceedings is not conclusive of invention in a subsequent suit for infringement between the same parties. The only question there is one of priority, and it is no doubt persuasive that in those proceedings invention was affirmed by one who subsequently denies it, and it is not to be allowed to prevail over other considerations which control it.

6. PATENTS-INVENTION - CONTEMPORANE-OUS APPLICATION BY SEVERAL PARTIES FOR THE SAME DEVICE.

Where several persons contemporaneously apply for patents for the same device, the fact that they caught the idea at the same time goes to show that it was simple and obvious, and that it did not require inventive genius to produce it.

MATCHETTE v. STREETER BROS.

(Circuit Court, N. D. Illinois, E. D. Aug. 15, 1910. 181 F. R. p. 380.)

PATENTS-VALIDITY AND INFRINGEMENT-VACUUM CLEANING APPARATUS.

The Matchette and Raddatz patent, No. 870,981, for a vacuum cleaning apparatus, has as one element of the combination an automatic governor adapted to open and close the pressure supply connection which has a positive "on and off" action, and was not anticipated in the prior art, and the combination with such novel and useful element discloses patentable invention, although the other elements are old; also, held infringed.

MECHANICAL INVENTIONS AND DESIGNS

Patents for which have been procured through the Patent Soliciting Office of E. G. Siggers, Patent Lawyer, Washington, D. C.

John S. Skaala and Ezekiel H. Hilliard, Portland, Ore. Rail Chair. The improved railway chair covered by this patent is designed to hold the abutting ends of the rails from any lateral movement and from creeping, and to provide means for securely holding the fish plates in engagement with the rails. It comprises a chair plate upon which the confronting ends of two rails are set, this chair plate having inwardly turned flanges on its longitudinal margins, adapted to engage over the angular edges of the usual fish plates, which are placed upon either side of the rails, these angularly turned flanges being closed at the ends to form pockets for the reception of the angular flanges of the fish plates, the chair plate being further provided with studs or other means for engaging with the base of the rails, the whole when assembled being secured to the ties by the usual

Arthur Derosier, Jr., North Oxford, Mass. Lug Strap Supporting Means. - This invention has for one of its objects to provide a means for maintaining the lug straps in predetermined positions on the picker sticks of looms, and to provide a novel attachment, which can be readily adjusted on any ordinary picker stick, and will effectively support a lug strap, preventing undue wear thereon and on the stick, thereby prolonging the lives of both. Another object is to construct said attachment so that the return spring can be attached directly thereto, thus avoiding the necessity of additional fasteners that weaken the picker stick, and also providing for adjusting the tension of the spring when the attachment is wound to shift the position of the lug strap to effect variations in the strength and power of the pick.

James E. Duncan, Elton, La. Two patents. Assignor of the second patent to the Duncan Ladder Co. Elton. La.—The invention of the first patent relates to a calculator by which computations that ordinarily require much time may be quickly and accurately made, and one which will admit of the substitution of parts having different tables of calculations thereon, so that computations of different kinds may be effected. The invention consists of a casing having a top, bottom and sides, guide-ways located on the inner walls of the sides of the easing, a plurality of slotted slides having tables of calculations thereon and mounted to operate in the guide-ways of the casing, a stop pin vertically located within the casing and disposed in the slots of the slides, and a base upon which the casing is rotatably mounted.

The object of the invention of the second patent is to provide a ladder, which in one position forms an ordinary step ladder with the usual acing legs, and in anoth forms an extended straight ladder, the bracing legs being turned upward, forming the upper section of the extended ladder, the ladder section having hooks projecting from the rear side near the upper end and a separate pair of hooks projecting from it at an intermediate point. The bracing leg section is provided with a swinging bail, which in one position is engaged with the intermediate pair of hooks to form a step ladder, and in another position is engaged with the end pair of hooks to provide an extended ladder.

Guy A. Eliason, Menomonie, Wisc. Record Tablet.—One of the objects of this invention is to provide a book or tablet, having on the face thereof separate sets of leaves or slips so arranged as to provide a plurality of separate and independent columns on the face of the tablet, each column being formed by a series of leaves independent of the leaves of the adjacent column. Another object is to provide a book in which a column containing certain subject-matter may be paralleled with a column containing other subject-matter relating thereto or to be compared therewith. The invention consists of a tablet having covers like a book, a plurality of sets of parallel leaves on the face of the tablet, each leaf of a set being separably turnable, removable and attachable and capable of being turned into position to show adjacent to the corresponding leaf of the next column.

Ernest L. B. Zimmer, Almena, Wisc. Three pats. Assignee Zimmer Vacuum Renovator Co. Minneapolis, Minn.— The inventor's aim in the first invenntion is to provide a device in the form of a distributor, adapted to be attached to the outlet conduit of a vacuum cleaner, whereby an air blast shall be obliged to pass through a body of material moistened with disinfectant, or with perfume, and forced out at the end of said device either directly into the room, or in other rooms by means of a conducting pipe. The device comprises an exterior casing having at one end an inlet opening, the other end being formed with a detachable cap having an outlet opening through it. and an interior container of open-work material entirely intersecting the inlet opening and closed at its outer end by a removable cap.

The invention of the second patent has for its principal object to provide a portable vacuum cleaner, adapted for cleaning draperies, rugs and the like, and having a series of radially arranged pumping cylinders fixed in an annular supporting tubular frame through which air is drawn from any desired source, the pistons of the pumping cylinders being actuated from a single shaft and the cylinders being connected to a common inlet and discharge conduit.

The object of the invention of the third patent is to provide a separating chamber of a portable vacuum cleaner having an inner perforate casing, a fabric strainer wall detachably located over the outer face of the casing, and an outer imperforate casing enclosing the inner casing and spaced therefrom, a material conducting pipe communicating with the interior of the inner casing, and an air exhausting pipe communicating with the interior of the outer casing.

Ernest A. Koschinski, Scranton, Pa. Pipe Coupling.—This invention has for its object to provide a pipe coupling, designed for use in connection with copper pipes employed in locomotive ejectors, air pumps and the like appliances, which when the coupling becomes leaky and worn may be taken down and replaced by a be burned off the pipe as has been the previous custom. The device comprises a sleeve having a seat at one end, an annular groove adjacent the seat, a sectional packing ring fitted in the groove, the ring having an extension surrounding the portion of the thimble between the groove and seat and shaped so as to be flush with the latter for forming a continuation thereof, and a nut surrounding the thimble and enclosing the ring, said nut having an internal flange arranged to engage the projecting portion of the ring.

William C. Yates, Coalinga, Cal. Surgical Appliance.—One of the objects of the invention of this patent is to provide an efficient means in the form of a bag, for treating diseases of the male organ of the body with a suitable liquid. Another object is to provide a hood or cover for the bag, in which means are provided for holdthe same in place and at the same time render the cover air tight, thereby preventing the liquid from leaking and soiling the clothes and also overcoming quick evaporation. Another object is to provide a cover with a means whereby the liquid can be applied to the organ after the bag and cover have been put in place and thereby eliminate all danger of the liquid from coming in contact with the hands or clothes of the user.

John W. Altmyer, Cedar Rapids, Iowa. Two patents.—The invention of the first patent has for its main object to provide a metallic post adapted to be constructed from a number of pieces of material, the same being separated and bound together so as to form a structure of maximum strength and minimum weight, and one capable of being used as fence posts, telegraph and telephone poles and the like. The structure comprises a post angular in cross section, composed of corner uprights, zig-zagly bent bracing members including alternately arranged long and short inclined braces and upright connecting portions, the upright connecting portions of the bracing members being arranged in pairs and abutting against the corner uprights, and a wire wrapped around the upright portions of the bracing members and the corner uprights for securing the same together.

One of the objects of the invention of the second patent is to provide a mail pouch especially useful to rural free delivery carriers, whereby means are provided for separately carrying the mail to be delivered and the mail to be collected, and to receive and hold stamps. Another object is the provision in a mail pouch of pockets to separately confine the mail of the different patrons, so that it cannot become mixed or overlooked, the pouch being adapted for ready mounting on a vehicle in convenient relation to the carrier, and being completely collapsible and expansible to accomodate itself to the varying amount of mail placed therein, and provided with a cover for protecting the contents from the weather.

Thomas P. Pigg, Farmington, Mo. Grave Record.—The device covered by this patent is especially designed for containing and preserving records relating to a deceased person, such as a biography or photograph, and is intended to be attached to a tombstone and to be easily examined by all persons interested in the life of the deceased. The record holder comprises a receptacle having an open front, a door for the open front, spring hinges connecting the door and receptacle for urging the door to its closed position, a swinging plate spaced from and connected to the inner side of the door by spring hinges, said plate having panels on its opposite sides, and an album pivotally mounted on the support between the plate and the door, and designed to hold photographs.

Delma E. Lee, Pontiac, Wash. Electric Switch.—The object of this device is the provision of an electric push button switch, adapted to be set flush into the wall or floor of a room, and so constructed that the entire switch mechanism is attached to the face plate and can be removed from

the socket or receptacle without the necessity of removing push buttons or disconnecting the wires. The invention comprises a receptacle, a face plate therefor having openings, push buttons disposed in the openings, a second plate arranged in the receptacle and secured to the face plate to be removed therewith, spaced contacts within the receptacle. a movable contact connected with one of the push buttons and normally disengaged from the spaced contacts, a slidable latch mounted on and carried by the second plate and arranged to engage the movable contact for holding the same in closed circuit position. a spring pressing on the latch, a stem on the other push button, and a cam on the stem arranged in co-operative relation with the latch for releasing the same by the inward movement of the said stem.

Dr. Sherman L. Axford, Lansing, Kansas. Combined Hot Water Bottle and Syringe Reservoir.-This invention has for one of its objects to provide a device wherein a reservoir is used in conjunction with a syringe, but in which the reservoir is detachable from the syringe and usable as a hot water bottle or container. Another object is to construct a device of this kind out of metal, approximately rectangular in side elevation, and curved as a whole to conform to the conditions of its use when used as a hot water bottle. The container is provided at its end with an inlet opening, closed by a stopper, which, when opened, acts as a suspension means for the container, and is held in spaced relation to the container. The diagonal lower corner of the container is provided with an outlet nipple, which when inserted in one position closes the container and in its reverse position forms a connection to which the flexible tube of a syringe may be attached.

Shelton C. Clark, Carleton, Neb. Wrench.—The principal object of this invention is to provide a reversible ratchet wrench, which is especially adapted for use in places where the ordinary wrench cannot be readily applied, and one in which a doubleacting dog is actuated by the rotation of the handle, and one in which a detachable socket is employed. The wrench comprises a body portion having one end bifurcated to form cheek plates, and the other terminating in a shank, a handle rotatably mounted on the shank, a socket-carrying head rotatably mounted in the ends of the cheek plates and provided with a ratchet wheel adapted to revolve between the said plates, a double-acting dog pivotally mounted on the body for engaging the ratchet wheel, and a spring arranged between the cheek plates and adapted to actuate said dog upon the rotation of the handle.

August Loock, Hayfield, Iowa. Nut-Cutter.-One of the objects of this device is to provide a nut cutter capable of being easily operated, and adapted to cut a nut at opposite sides of a bolt and of simultaneously spreading the severed nut, whereby they may be quickly removed from the bolt. The tool is of simple construction, and comprises a relatively fixed shank having a transverse jaw extending therefrom at a point intermediate the ends thereof and provided with a slot, a slidable shank extending from said slot and provided with a transverse jaw, removable cutters mounted on the transverse jaws at their ends, and a lever connected with the slidable shark and with the relatively fixed shank for moving the jaws toward and from each



Advertisements inserted in this column for 10 cents a line (about 7 words) each insertion. Every new subscriber sending \$1.00 to The Inventive Age will be entitled to the Age one year and to five lines three times free. Additional lines or insertions at regular rates.

FOR SALE—Patent No. 986,460. Animal Trap. Catches all kinds of small animals. Will sell to highest cash bidder. Address, H. J. Hagge, R. F. D. No. 2, Ogden, Iowa. sep

FOR SALE-Patent No. 983,952, dated Feb. 14, 1911. Machine for removing weeds and performing other cultivating operations. Address, Gus Thomas, Lind, Washington.

FOR SALE—Patent No. 966,641, Corn Husker. Can be worn on either hand. Very comfortable to the user. Can remove ears of corn in any position Address, Rousseau H. Atkinson, Goldengate, Ill.

FOR SALE-U. S. Patent No. 975,537; also Canadian Patent. Animal trap that kills the animal. Best Marten and Mink trap out. Light to pack. Made of wire. Investigate. Address, John Kubes, Broadview, Mont.

FOR SALE—Patent No. 986,295. Vertical Upsetting Press. Would sell outright, or dispose of same on a royalty basis. For full particulars, write Justus Johnson, 413 Goepp Street, Bethlehem, Pa. sep

For Sale—No. No. 970,940. Derrick and Hay Fork. This hay fork and derrick will unload hay from wagon to the stack, or to hay mow in barn. It will also load the hay out of the stack onto the wagon. Can be used successfully in conveying wheat that has been cut with a header, from stack to the machine when thrashing. Address, John A. Miller, Harding. S. Dakota, sep

For Sale - Aquaplane Patent No. 989,604, dated April 18, 1911, Will propel boats 60 miles per hour. Address, S. M. Howard, Gettysburg, South Dakota.

FOR SALE-Patent No. 986,221. Safety cranking device for automobiles. Prevents crauk from injuring man cranking machine. Would like to hear from parties interested. Address, H. W. Saeger, Battle Creek, Iowa.

F OR SALE or on royalty-Patent No. 982,130. Resilient steel tire for automobiles or other vehicles. Best spring steel tire ever put on the market. Canadian patent pending. Address, James S. Draper, Texarkana, Ark. aug

FOR SALE—Patent No. 984,186, dated Feb, 14, 1911, Rim for automobile tires. My new rim dispenses with all tools. Tire can be changed without a tool, easily and quickly. Address, G. H. Bogenhagen, Beemer, Nebr. aug

FOR SALE—Patent No. 974.690, dated Nov. 1. 1910, Miner's Lamp. Has protector or shield encircling the spout. Possesses many points of advantage over the ordinary lamp, Invented by a practical miner. Address, Dominick Miglio, 4082 Elm St., Calumet, Mich. aug

FOR SALE — Patent on Self-Feeding Potato Planting Sack. Price \$200. Drops the potatoes directly into the planter from the sack. If interested write me for copy of patent. A. C. Simonis, R. F. D. No. 1, Box 78, Amherst Junction, Wisc.

FOR SALE—A wonder at last. An extension single and double iron bedstead, also folding springs and extension slats. Patent No. 985,355. Will sell reasonably. For particulars address, S. R. Lockhart, Buna, Texas.

FOR SALE—Patent No. 980,238. For outright sale. Little Daisy Fan Attachment for Dental Engine. It is so simple in construction that it was in operation less than one hour, after first thought of. It is perfect and has no competitor. Address, Dr. J. S. Frisbie, D. D. S., Rotan, Texas.

POR SALE or lease—U. S. Patent No. 971,517, recently granted. Fluid Motor, Very valuable device comprising valve-gear to be used with all kinds of motive fluids. Dead center absolutely avoided. No fly-wheel needed. Simplicity of construction with other advantages. For particulars address. Carlos F. Benitez, 141 Ocampo St. Guadalajara. Mexico.

FOR SALE—Patent No. 981,052, Manure Loader; Patent No. 976,250, Walking Rake. Will sell reasonably. Investigate for your self and make me an offer. Address W. F. Bohling, Arcadia Lowe.

For Sale-U. S. Patent No. 980,768, dated Jan. 3, 1911. Oil Can Pouring Spout. Will sell for eash only to the highest bidder. Address, Peter Faure, Porterville, California.

FOR SALE—Patent No. 981,866, patented Jan. 17, 1911. The very latest improvement in hose coupling. Can be coupled five times quicker than the old one. Will sell my rights reasonably. For particulars address, S. R. Lockhart, Buna, Tayas.

FOR SALE — Patent No. 980,193. Drawer Handle. Non-rotatable. Adjusted to any position. Counter-sunk screw inside. Name card attachment. Simple and inexpensive. Address, Sawwa H. Brenia, P. O. Box 164, Olyphant, Pa.

GR SALE—Patent No. 988,413, for Non-Refillable Bottle. Address, James Veno, General Delivery, Vancouver, B. C., Canada. jy

POR SALE outright or on royalty — Patent No. 982,568, dated Jan. 24, 1911. Automatic Mail Bag Catcher and Delivering Device. Exchanges mails from fast trains. Will accept best offer, royalty or cash. Correspondence solicited. Address, Charles E. Boone, Elk Creek, Neb.

FOR SALE-U. S. Patent No. 981,540. A rotary engine. The best ever made. For terms of sale apply to M. A. Dooley, Cary Station, Ill. jy

FOR SALE-Several good patents. Direct from owners. No commission, Address, Advertisers Co-operative Association, Chicago, Ill. jy

FOR SALE — Patent No. 887.552. Improved Tongs. Two ways of using them. Can be made to hold large or small articles. Address, James Veno, Vancouver, B. C., Canada. oct

FOR SALE outright or on royalty—Patent on sanitary case for comfortables. Splendid device. Unlimited demand. Address, A. C. Caldwell, No. 633 14th St. Oakland, Cal.

FOR SALE-Patent No. 976,737, dated Nov. 22, 1910. Well Packer. Designed to pack bottom and top of gas strata to prevent water from rising in bottom of gas or oil well. Address, William Hemme, Altoona, Kansas.

FOR SALE-U. S. Patent No. 974.411; Canadian Patent No. 129.289. Combination Rail Brace and Nut Lock. Prevents low joints, rails spreading, rails turning laterally. All nuts locked against turning movements, avoiding expense of track walkers. Can be used at either joints or intermediate points to best advantage, thus avoiding serious wrecks. The best combination brace yet invented. Will consider any reasonable offer, either outright or royalty and part cash. Address, C. Maunders, Jackson, Miun.

WANTED.

WANTED—The detailed history of persons, as to age, location, hopes, disappointments, success and failures in patents. Object mutual exchange of testimonies. Nothing to buy or sell. Address. Joseph A. Shires, 1921 Sherman Street, Denver, Colo. sep

VANTED a Company in the U. S. to manufacture my saw-fitting device, patent No. 972,789, dated Oct, 10, 1910. Also a company in Canada to manufacture same device, Canadian Patent No. 124,345, dated March 8, 1910. I will sell either or both of said patents. Address, C. R. Pierce, Rainier, Washington.

WANTED-Agency propositions. What have you to sell? Address, Ernest Morse, Luverne, Minn.

WANTED—Two or three persons with some capital to correspond with a patent owner of a new meritorious article. Practice on model very satisfactory. Will not sell patent but will join in company. Address, F. D. F. Box 28, Waterbury, Conn.

WANTED-Not for sale but want a company to manufacture my manure loader on royalty, Patent No. 918,695. Address, Lars C. Peterson, Osage City, Kansas.

WANTED—Partners for foreign patents on whip socket lock, for share in patents. U. S. patent allowed. Key remains in lock when whip is loose. One-half turn of key locks whip, When whip is locked key is removed. The harder the pull the tighter the grip. For particulars address, Clarence S. Skinner, Payne, Ohio. jy

W ANTED—Four (4) men to loan me \$100 each, for four years, at 6 per cent to help me to push four (4) good paying toy inventions, for which I will return to each of them their loan, and I will give also to each loaner 10 per cent of all the income from sale of said patent inventions in whatever way I may dispose of said patents. Here is your chance. Who will accept, Address, E. W. Barton, No. 35 Carroll St., Binghamton, N, Y,

WANTED—A company to manufacture a bag holder made of sheet iron. U. S. Patent No. 968,349. dated August 23, 1910. Will have patent for Canada in a short time. Address, Louis Hanson, Cottonwood, Idaho.

Electrical Review and Western Electrician

Published weekly from the center of the industry, this publication is in the best possible geographical position to gather and present the most important and interesting news of the entire electrical industry.

SUBSCRIPTION PRICE

U. S. \$3.00 per year, Canada \$4,00 per year, Foreign Countries \$6.00 per year. Sample Copy Free

It is seen and read by practically every buyer of electrical material in this country and abroad. Advertising rates on application.

ELECTRICAL REVIEW PUBLISHING CO., 507 Marquette Bldg., CHICAGO.

A NEW BOOK FOR INVENTORS Patents and How to Make Money out of Them,

By W. B. Hutchinson.

This is the only book published, giving a detailed and full account, from the author's actual experience, of just what steps are necessary from the time the invention is conceived, to the time it is sold, with a clear and concise resume of the law and practice, legally and commercially, of trade-marks and copyrights. It also tells accurately How and What to invent. How to sell Inventions, Place them on the Market, Interest Capital in them, and to successfully Promote a Stock Company. It also contains an index of forms worth double the price of the book to any one interested.

ELEGANTLY CLOTH BOUND.

GOLD STAMPED. \$1.00 Postpaid.

Sent with one subscription to AGE for \$1.50.

Or will sell separately.

Address— The Inventive Age Pub. Co., 918 F St., N. W. WASHINGTON D. C.



A VALUABLE OFFER TO INVENTORS.

A Complete Outfit of Printed Matter for \$20.

- 1. A zinc etching of your invention for use in printing letterheads, envelopes, circulars, etc.
- 2. One thousand printed circulars.
- 3. Five hundred envelopes with your name and address printed in the corner.
- 4. Five hundred letterheads with a cut of your invention, and your name and address neatly printed thereon.
 - 5. A list of manufacturers in the special line of your invention.
- 6. A form letter to be followed in conducting your correspondence with manufacturers and others.
- 7. Four dozen deeds useful in selling state, county, town or shoprights.

 Address:—

INVENTIVE AGE PUBLISHING CO. Dept. O. WASHINGTON, D. C.

ATTENTION INVENTORS!

LISTS OF MANUFACTURERS FURNISHED.

We have increased our facilities for furnishing lists of manufacturers, and now cover every line of industry. The names are obtained from well known directories.

Our charge for each list is one dollar.

In ordering, please state specifically the class of manufacturers desired. Address: Inventive Age Pub. Co., Dept. M. 918 F. St., Washington, D. C.

Every subscriber when sending \$1.00 is entitled to a free advertisement, not exceeding five lines. of any patent in which he may be interested. The ad. will be inserted three times.

THE INVENTIVE AGE PUBLISHING CO., Washington, D. C.
I herewith enclose \$1.00 for one year's subscription to
"THE INVENTIVE AGE."
I also enclose ad. for insertion in the (Patents for Sale*) (Want*) column of your paper.
NAME
P. O
STATE

Please indicate in which column you want the ad. inserted.

N. B.—Remit in the way most convenient.

379 Inventive age

Established 1889.

Published monthly by

THE INVENTIVE AGE PUBLISHING CO.,

National Union Building, 918 F Street, N. W., Washington, D. C.

THE INVENTIVE AGE is sent, postage prepaid, to any address in the United States, Canada, Mexico, Hawaii, and Porto Rico, for ONE DOLLAR a year: to any other country, postage prepaid, ONE DOLLAR AND TWENTY-FIVE CENTS,

Correspondence with inventors, mechanics, patentees, and manufacturers, is invited. The columns of this journal are open for the discussion of such subjects as are of general interest to its readers.

Technical matter is particularly desired. We want practical information from practical men.

want practical information from practical mer THE INVENTIVE AGE is independent.

Special facilities for furnishing cuts of any patented device together with descriptive article. Business specials 10 cents a line each insertion: 7 words to the line. No advertisement less than 25 cents.

Address all communications to

THE INVENTIVE AGE PUBLISHING COMPANY,

WASHINGTON, D. C.

Entered at the Post-office as 2nd class matter.

WASHINGTON, D. C., JULY 1, 1911.

THE CANADIAN PATENT OFFICE v. THE U.S. PATENT OFFICE.

A Comparison.

It is an old saying "that comparisons are odious," but at the risk of saying something disagreeable, we shall proceed with our story.

Quite recently an attorney received a request from a correspondent to ascertain the ownership of six Canadian patents issued to a certain inventor. The attorney wrote to the Canadian Patent Office for information on the subject, and requested that an abstract or certificate pertaining to the said patents be furnished. Having in mind the fact that the U.S. Patent Office always charged for such searches, he expected of course that a fee would be called for by the Canadian Patent Office and expressed a willingness to pay any reasonable charge.

Within a few days the attorney received a letter reading as follows:—
"SIR:—

In reply, I am to inform you that so far as the books of this Office show, these patents are the exclusive property of the patentee, no assignments having been recorded against them.

I have the honor to be,

Your obedient servant, W. J. Lynch, Chief of Patent Office."

No bill was submitted or charge made by the Canadian Patent Office for this information, although before the letter was written by the Canadian Patent Office, a search had to be made to determine whether or not any assignments had been filed. This action of the Canadian Patent Office shows that it is willing to go out of its way in order to accommodate inventors. As a result of this action, the attorney was able to give the information to his client without charge.

Now, if the same attorney should apply to the U.S. Patent Office for information as to the ownership of the corresponding U.S. patents, and assuming that the record of transfers of patents in the United States Patent Office showed that no assignment had been recorded against the U.S. patents, would the attorney be advised by the United States Patent Office, free of charge, that "so far as the books of this Office show these patents are the exclusive property of the patentee, no assignments having been recorded against them?" Not at all! He would be requested to remit \$1.00 for the certificate of search as to the title of each of the patents, and as there are six patents in all, \$6.00 would be called for. In other words, for the information that the Canadian Patent Office supplied, free of charge, the client would be required to pay \$6.00 to the U.S. Patent Office. This does not mean that the U.S. Patent Office is so poverty-stricken that it must charge for such things in order to keep its doors open, for on the contrary there is quite a surplus turned back into the U.S. Treasury each year, and indeed there has not been a time, within the memory of the oldest practitioner, when the condition has been otherwise. What it does indicate is the lack of the spirit of accommodation which prevails to a certain extent throughout all the government departments. This does not apply solely to the U.S. Patent Office. It may be found, if one would care to look for it, in the Post Office department, or even the Department

Another thing in this connection which has always seemed to us to be small and petty, is the treatmentaccorded to persons when they seek to copy from the records of the U.S. Patent Office. A man may examine the assignment records, or the patented files, or the other records of the U. S. Patent Office, and make notes therefrom; but let him start to copy an assignment verbatim, and he is called down. There was a time in the history of the Patent Office when a system of petty espionage was adopted to prevent attorneys and others copying from the official records. One naturally inquires the reason for such actions. The Patent Office charges 10 cents a hundred words for all copies, and attorneys can get such copying done for 6 cents a hundred words, and even less. Naturally an attorney would prefer to employ some outside copyist at 6 cents per hundred words than to pay the government 10 cents per hundred words. He is prevented from doing this, because the policy of the Office has been to keep all this work to itself as much as possible by refusing to attorneys the privilege of copying from the assignment and other records. That is to say, in order that the government may make a few more dollars each year to turn back into the Treasury, by copying from the official records at 10 cents per hundred words, attorneys have been refused the small privilege of making the copy themselves, or having it made on the outside, by those who will attend to it equally as well as the Patent Office, at less expense and with greater expedition

To some extent this bar has been let down in recent years, but it still prevails in certain divisions of the Patent Office. To us it seems a petty business for the United States government. Attorneys should be allowed to make copies from records just as freely as they wish, and the present system of espionage over attorneys when they are making notes from certain official records should be done away with. It is too much to expect the U.S. Patent Office to furnish free of charge to an attorney information concerning the condition of the assignment records pertaining to a certain patent, as this may be out of harmony with the policy of the Patent Office to make as much money as possible and turn it back into the Treasury; but the habit of spying on attorneys, which we have adverted to, for fear the government may lose a few jobs of copying the records, ought to be stopped, and every facility afforded attorneys in making such copies as they need.

When an applicant or an attorney wants a copy he usually desires it immediately; but unless a copy of a specification or an application is required for court purposes or in some manner pertains to court litigation, the applicant or the attorney usually has to wait weeks before he can get the copy made. The usual routine when a copy is ordered is to first ask for an estimate of the cost. You wait two or three days and then get a letter stating the cost. The money is then deposited, and if you cannot prevail on the chief clerk of the Patent Office to have the order made special, you will probably have to wait several weeks before the copy can be furnished. One would think that in view of the rush conditions prevalent in the copying division of the Patent Office, they would welcome it as a relief from the burden of the work to have the attorneys make their own copies; but we have never yet had an administration of the Patent Office which viewed matters in that broadminded spirit, and we presume that when we do, we may expect to welcome the advance agent of the millennium.

To keep themselves posted in the progress of the arts in which they are interested, inventors and manufacturers should subscribe for the INVENTIVE AGE, which publishes a list of all patents issued each month. The low subscription price and the character of the publication entitle it to the support of all the inventors of the country.

WOES OF INVENTORS.

Our recent efforts to deal editorially with the problems and trials which inventors have to face have attracted wide attention, and we are in receipt of many letters thanking us for the advice and warnings given, and describing other drawbacks to which patentees are subjected. The path of the inventor is indeed full of pitfalls. Perhaps no class of people is more liable to be the prey of sharpers of various kinds. Faith is understood to be blind, and his very belief in the merits of his device makes the inventor an easy victim to the wiles of those who wish to fleece him. Unscrupulous patent attorneys take advantage of this faith, and do their best to foster it by advertising glittering accounts of fortunes made from inventions, and mythical rewards for certain devices. Many a poor man is induced by these misleading statements to work hard and scrape and save enough money to pay for obtaining a patent, in the pitiful hope of bettering his condition. There is no one to warn him that so far from the patent bringing him a profit, the chances are five to one against his ever recovering the money he has paid in government and attorney's fees. And directly the patent issues, he is led into further expense by specious offers to sell his patent. He receives countless circulars suggesting valuable assistance, after, be it noted, the receipt of a fee, which being sent, he hears no more from his sanguine correspondent. The devices for squeezing cash from the inventor are manifold, and our mail contains many complaints. Most of the suggestions for the relief of these conditions are impractical. One indignant writer demands to know if there is no federal protection against the evils described. We would answer that except for the occasional disbarment of a patent attorney who carries his illegal practices too far, and the exclusion from the mails by the Postoffice Department of the advertising matter of fraudulent concerns, there is none. And there are so many ways of keeping just within the letter of the law, that these penalties are avoided in the majority of cases. Cannot the government, one correspondent asks, protect an inventor against the large manufacturer, who by means of some technicality is able to evade the claims of the original patent, and reap all the profits therefrom? The government does not protect the poor man against the rich in any branch of industry. The only safeguard the poor inventor has is to exercise great discrimination in the selection of his patent lawyer. If his invention is broad, and if his claims are drawn conscientiously, the patent will usually stand against all the efforts at burglary on the part of the capitalist. We have in mind an instance of this. in the case of a simple but valuable device for an improvement in trousers. The claims were so well and comprehensively drawn that repeated efforts on the part of manufacturers to break. down or evade the patent, have been

in vain. There are many such honest and competent lawyers, but they are not of the class that advertise most widely and keep themselves before the public eye. They do not rush cases through the Patent Office in order to earn a fee, accepting any kind of a claim, which investigation proves to be worthless. The same writer declares that the lack of federal protection encourages crime. The government cannot protect people from investing in get-rich-quick schemes, or speculating in futures, or taking patent medicines, or rocking the boat. These things can only be learned by general education of the public, and we are trying to assist in this education by the advice we are giving in these columns.

Another correspondent wants the term of a patent extended to cover a man's life time, so that he can reap longer benefits therefrom, while still another thinks the whole system shoud be abolished, as it fosters monopoly. Simple little articles, he points out, that can be manufactured for twenty five cents, are sold for a dollar or two. His plan is to have the government give a reward for all inventions of merit, and then declare them free to the public. The obvious difficulty with this project is, how could the question of merit be decided? It would involve the appointment of a commission and probably an appeal to a court. The inventor's estimate of the value of his device would be sure to differ materially from the opinion of the public, which would have to taxed to give the man his reward. Again, even if an article were declared free, it is often impossible to make it without special apparatus, and a man would not wish to go to the expense of establishing a factory and advertising and introducing the article, if he had no security that others might not do the same. This would be an effective damper upon industry.

We read in one of these letters: "When the government accepts a fee to protect a man's ideas its decision should stand above that of any court, or it should refund the money. If a man bought a piece of land and some one else wanted it and brought suit and had the court declare in his favor, it would mean revolution." As a matter of fact, land has been taken from the rightful owners by legal chicanery or royal decrees since the days of Jezebel, and such acts do not, in these times, meet with the retribution of the Biblical story. But apart from this, a man has as a rule by no means the same clear and material title to his patent as he would have to land. He invents a mower, say, and sends a drawing or model to Washington. Examination in the Patent Office shows that the thing as a whole is old, but the attorney in order to earn a fee and make the inventor feel that he is getting something for his money, gets a claim allowed on the method of fastening some small attachment. That is really all the patent covers, but the inventor-perhaps because of the technicality of the language, perhaps because of his strong conviction as to the novelty of his mower,—believes in good faith,

that the entire machine is protected by the patent. Of course the latter will not stand a breath of investigation. An examination of the files of the Patent Office often amazes an inventor who thinks he has some new thing. He comes away convinced, not only that his own device is old, but that everything else under the sun has already been patented. It is on these previous patents, which have never been brought before the public, that capitalists found their efforts to break down new patents that they wish to control, and in most cases they are successful.

As to the conflict of authority between the executive and judicial branches of the government, the best solution for this is thought to lie in the creation of a special court for patents, after the plan of the recently created court of commerce. As we have several times stated, the appointment of judges trained in patent law and practice whose whole time would be devoted to the consideration of these cases, would harmonize the application of the laws and raise their standard. Owing to the faults in our present system, it is quite true that many patents as issued do not afford any protection to the owners. German patents are better than ours, because they are not so readily granted, the searches through previous patents being more thorough and the inventor being required to prove the merit of the device to the satisfaction of the examiner. British patents, on the other hand, are granted practically without opposition, and the question of the worth of the patent is then left for the courts to decide. Our system lacks the practical advantage of both of these methods, and is full of contradictions and defects. It needs reform in many directions. The Patent Court should be the first step in this direction, and it should be promptly followed by the provision of facilities for a complete search of the patent records of all countries, and by other reforms that we have already advocated.

Titanium Steel Rails.

Titanium steel rails for railways were first made experimentally in 1907, and the results were so satisfactory that several companies undertook their manufacture. During the last year the industry entered upon the commercial scale. Experiments on the New York Central have confirmed those made elsewhere in showing that they wear several times as long as those made of ordinary Bessemer steel. Titanium has a great affinity for nitrogen, and since it is believed considerable nitrogen remains as an impurity in ordinary steel, the good effects of an alloy of titanium are ascribed to its acting as a flux, thereby removing impurities and increasing the solidity of the steel. The increased cost is put at \$3.50 per ton of

THE INVENTIVE AGE contains sound advice to inventors and patentees. For lack of such advice many have lost money. Subscription price, one dollar a year.

A DECISION WHICH SHOULD NOT STAND.

The Circuit Court of Appeals for the Ninth Circuit has recently rendered a decision, which, if followed by the Patent Office, will tend to restrict the grant of patents on certain inventions, which in the past have been regarded as patentable subject matter. It was the case of the American Disappearing Bed Company vs. Arnaelsteen, and it bore upon patent No. 839,996, granted to Lawrence Holmes on January 1, 1807, for an apartment house with a disappearing bed. There were thirteen claims in the patent, but when analyzed the essential features of the invention related to the construction of adjacent rooms in an apartment house in such a way that in one of the rooms by the use of a double floor, a recess is created into which a bed from the adjoining room may be stored when not in use, thereby closing the opening between the rooms so as to leave no suggestion of a bed. The defense against the infringement suit was that the invention was not within any of the classes which are made patentable by law, the statute prescribing that patents may be obtained on any "new and useful art, machine, manufacture, or composition of matter, or any new and useful improvement thereof." It was claimed by the complainant that the invention came within the term "manufacture" when that term is given the liberal construction which accords with the genius and purpose of the patent laws. Walker in his standard text book on patents says:-

"The word manufacture has a much narrower signification in American patent laws than it has in those of England. In the latter it includes every thing made by the hand of man, and, also, includes processes of manufacture, According to the former, processes are patentable because they are arts, while some of the things made by the hand of man are patentable as machines, and some others are patentable as compositions of matter, and some others are patentable as designs. Whatever is made by the hand of man, and is neither of these, is a manufacture in the sense in which that word is used in the American patent laws. The term should be held to justify a patent for the invention of a new and useful human habitation, or a new and useful improvement of such a structure."

We believe that the statement contained in Walker on Patents is correct, and that the United States patent law should be interpreted in a liberal spirit and not in a narrow one The United States Patent Office in granting patents has always accepted the view taken by Mr. Walker, that whatever is made by the hand of man, and is neither a process, or a machine, or a composition of matter, or a design, is a "manufacture" in the sense in which that word is used by the patent law. The Patent Office has for many years granted patents on improvements in jails, houses, bridges, or monuments, and there has

never been any question raised that it was wrong in granting such patents. According to the Judges composing the Circuit Court of Appeals for the Ninth Circuit, the term "manufacture" is restricted to "articles or implements made by human agency from raw or prepared materials."

This decision affords a striking instance of the advisibility of having one appellate court to determine finally and for all time disputed questions in patent cases. It is presumed that the complainant in the case under consideration will endeavor to get the Supreme Court of the United States to pass on the question involved, and it is to be hoped that they will succeed in accomplishing this. We hazard the guess that the Supreme Court will reverse the Circuit Court of Appeals and accept the view of Mr. Walker that the term "manufacture" in the United States patent law should be given a liberal interpretation and not a strict one.

Just what view the Patent Office will take of this decision, whether it will accept it as good law and cease granting patents on apartment houses, jails, and other structures, is uncertain. If the Patent Office pays no attention to the decision, it will not be seriously felt outside of the particular jurisdiction over which the Circuit Court of Appeals for the Ninth Circuit presides. Should the Patent Office follow this decision, and regard it as good law, it may result in the refusal on the part of the Office to grant patents on inventions which are not strictly articles of manufacture. This would necessarily exclude buildings, and parts of buildings.

New Metal for Tools.

The exhaustion of the supply of iron-remote as that contingency seems-would nevertheless not deprive the world of cutting tools. It has been discovered, says the Literary Digest, that an alloy of cobalt and chromium is an excellent substitute for steel, and has in addition one valuable property that steel does not show—it will not rust or tarnish. There is just one serious objection to steel, as an element for cutting instruments, and that is its susceptiblity to corrosion or rust. No matter how highly finished a steel tool may be, constant vigilance is necessary to protect it from rusting. The new alloy, which is called stellite, not only rivals steel in cutting qualities, but also possesses a resistance to atmospheric influences which is perhaps equalled only by gold and platinum. Cobalt is a by-product in the mining of silver, and when combined with chromium and cast into bars, it works readily at red heat and forges into thin strips which, when cool, are as hard as mild tempered steel, and can scarcely be scratched by a file. A knife blade, after being in use for a year, shows not the faintest sign of tarnish.

In color the metal stands between silver and steel, and if polished shows high lustre. Its elastic limit is not quite equal to that of tool steel of the same hardness, but it is much tougher. Razors of the alloy take smooth, keen edges, but require more frequent

stropping than steel.

CLASSIFIED list of Patents issued during the month appears in each issue of the Inventive Age. This keeps inventors and manufacturers posted in the art in which they are most interested. - We will send, postpaid, to any address, printed copies of any U. S. patent, with specifications and drawings, upon receipt of 10 cents per copy.—Please give correct data in ordering.—Address.

THE INVENTIVE AGE PUBLISHING CO., 918 F St., N. W., Washington, D. C.

LIST OF PATENTS

Issued May 2, 1911.

MECHANICAL PATENTS.

Continued from Inno Number

(Continued from Jnne Nnmber.)
Trolley-pole,
Trolley-poleO. W. Swanson Trolley-poles, Pressure-controlled operating means forA. A. Strange et al. Trolley-wheel-restoring deviceJ. D. Carey TrnekE. M. West Truck, LoadingT. S. Chesnutt Truck, TongneC. A. A. Rand Tube-mill and ball-mill lining. F. C. Brown Tubular fabric upon a longitudiually-moving mandrel or former. Automatic machine
Truck, LoadingT. S. Chesnutt
Truck, Tongne
Tubular fabric upon a longitudiually-moving mandrel or former, Automatic machine
for the mannfacture of unwoven E. D. C. Bayne et al.
Tubular fabric upon a longitudiually-moving mandrel or former, Automatic machine for the mannfacture of unwoven E. D. C. Bayne et al. Turbine-blading means. L. A. Haines Turbine. Gas
Type-writing machineL. D. Broughton
Type-writing machine
Type-writing machineH. A. Moyer et al.
Umbrella Folding J. P. J. O'Neil
Valve and hornI. E. Stump Valve, Engineer'sE. Gonzenbach
Valve for steam and hot-water radiators, Automatic
Valve-gear, CorlissI. J. Lauhon Valve, GlobeJ. L. Schrode
Valve-motionS. B. Adams Valve, Overbalanced fluid-pressure
Vehicle running-gearA. de Dion et al.
Vehicle-spring. M. M. McIntyre Vehicle-spring. Proposition F. W. Wills
Vehicle-wheel (2 pats.)W. L. Howard Vending-machine
Vending-machineR. Fergusson Vessel, Double-walled (2 pats.)
G. P. Altenberg et al. Vessel-fender A. Geering
Vessel-fender
Washing-machine J. A. Skaer
Water-heater, ElectricalW. R. Ray
M. B. Cresswell Wave-motor D. M. Barteau
Weighing and filling machine, AutomaticF. J. Heybach
Well shut-off
Window E. Potter
Window frame and sashA. H. Newpher Wing strategy
Wire-winding machines, Notching means
Wood, Preserving. J. Dehnst Wood-preserving composition. C. Ellis
Woodworking-machineII. Rieck Wool fiber, Apparatus for supplying liquid
Type-writing machine (2 pats.) F. A. Young Type-writing machine. H. A. Moyer et al. Type-writing machine. H. A. Moyer et al. Type-writing-machine ribbon mechanism O. C. Kayle Umbrella, Folding. J. P. J. O'Neil Valve and horn. I. E. Stump Valve, Engineer's. E. Gonzenbach Valve for steam and hot-water radiators, Automatic. W. Houser Valve-gear, Corliss. I. J. Lauhon Valve, Globe. J. L. Schrode Valve-motion. S. B. Adams Valve-motion. S. B. Adams Valve-motion. S. B. Adams Valve-motion. S. B. Adams Valve-bicle shock-absorber. C. A. Garvey Vehicle running-geav. A. de Dion et al. Vehicle shock-absorber. C. A. Garvey Vehicle-spring. M. M. McIntyve Vehicle-spring. Pneumatic. F. W. Mills Vehicle-wheel (2 pats.) W. L. Howard Vending-machine. G. W. Peter Vending-machine. R. Fergusson Vessel, Double-walled (2 pats.) G. P. Altenberg et al. Vessel-fender. M. Morauszky Wagon, Dumping- E. Cronenwett et al. Washing-machine. J. A. Skaer Waste-supporter. F. G. Hepburn Water-heater, Electrical W. R. Ray Water-purifier and oil-separator M. B. Cresswell Wave-motor. D. M. Barteau Weighing and filling machine. Automatic F. J. Heybach Well shut-off. C. B. Thompson Wells, Rope-socket for oil- Well shut-off. C. B. Thompson Wells, Rope-socket for oil- Window E. Potter Window-cleaning attachment. M. J. Davis Window frame and sash. A. H. Newpher Wire-stretcher. J. A. Cowie Wire-winding machines, Notching means for L. Fisk Wood-preserving composition C. Ellis Wood-preserving composition M. J. Davis Window fisher, Apparatus for supplying liquid to W. J. Murvay Wrench. S. E. Fess

Issued May 9, 1911.

MECHANICAL PATENTS.

MECHANICAL PATENTS.

Acetylene-generator.....L. Janecek
Acid electrolyte used in refining copper,
Process and apparatus for purifying...

C. II. Aldrich et al.
Acid. Producing beta-methyladipic (2 pats.)...F. Hofmann et al.
Aerial navigation...J. L. Nichols
Aerial-navigation apparatus. J. M. Alleas
Aeroplane...J. Hughes
Agricultural tractor...A. E. Zock
Air-brake system...F. Goff
Air purifier and separator.

D. Bashore et al.
Alcohol or alcoholic matters from wool-fat,
Obtaining...S. Morgenstern
Alfalfa-mill...E. F. Rose
Amalgamator...A. B. Kittson
Anchor...J. Kennedy
Anchoring, Land-..J. A. McGreevey
Angle-bar, Reinforced...P. Wolhaupter
Auinal-trap...E. L. Roberson
Ankle-support and protector...J. Wolfe
Antiskid attachment for wheel-tires...

C. E. Russell et al.
Armor-plates and other articles of steel or
alloys of steel, Manufacture of cemented...
F. Giolitti

Batteries and the manufacture thereof,
Batteries and the manufacture thereof, Positive plate for storage. P. G. Salom Beam-clamp-making device. A. A. Noyes Bearing, Shaft and axle. F. Maxant
Bearing, Shaft and axleF. Maxant Bearing, Balancing device for thrust
Bearing, Shaft and axleF. Maxant Bearing, Balancing device for thrust
Bed
Bed-bottom fabricW. H. Sleight Bed-jackC. H. Swanger
Bed or spring bed-bottom, Sanitary
Bed-spring Bed-bottom, Santary J. Winget Bed-spring P. M. Barber Bed, Wall N. B. Douglass Bedclothes-protector F. O. Adams Bell desk instrument C. L. Williams Bell, Musical J. C. Deagan Beta-methyltetramethylene-diamin, Produc-
Bedelothes-protectorF. O. Adams
Bell, MusicalJ. C. Deagan
ingF. Hofmann et al.
ing. F. Hofmann et al. Binder, Loose-leaf. R. G. Hubby Binder, Loose-leaf. S. J. Pridgen et al. Binder, Loose-leaf. S. J. Pridgen et al.
turing shredded-wheat cup
Biscuits, Machine and method for manufacturing shredded-wheat cupturing shredded-wheat cupturing cloth
Bleaching cloth. E. D. Jefferson Boiler-disincrustating compound. R. L. de Guevara Boiler-furnace. J. Fournia Boiler furnace. Steam- J. Pomeroy Book-cover G. H. Beckett Book-stand. P. A. Hazard Bottle-capping machine. W. H. Niemeyer Bottle-caps, Apparatus for the manufacture of. T. B. Wilcox Bottle, Therapentic. L. F. Gillette Box machine, Wire-bound-J. H. Greenstreet Boxes or bottles, Making. C. F. Jenkins Brake apparatus, Fluid-pressure. J. Reichmann Brooms, mops, &c., Holder for E. W. Davis Brush, Fountain- E. J. Sick Brush, Tooth- J. Orthwein
Boller furnace, SteamJ. Fourna Boller furnace, SteamJ. Pomeroy
Book-coverG. H. Beekett Book-standP. A. Hazard
Bottle-capping machineW. II. Niemeyer Bottle-caps, Apparatus for the manufacture
of
Box machine, Wire-bound, J. H. Greenstreet Boxes or bottles, Making,, C. F. Jenkins
Brake apparatus, Fluid-pressure
Brooms, mops, &c., Holder for, E. W. Davis Brush, Fountain
Brush, ToothJ. Orthwein Buckle E. N. Humphrey
Buckle, SlideL. W. Wright Building-block L. Sajo
Brush, Tooth- J. Orthwein Buckle. E. N. Humphrey Buckle. Slide- L. W. Wright Building-block. L. Sajo Building construction. C. D. Salfield Buildings, System of constructing.
Buildings, System of constructing. E. P. Boyd Bundle-tying implement H. M. Wolf Burglar-alarm L. M. Pratt Burglar-alaim R. and J. Neilson Burner L. E. Shaw Button, Link cuff F. P. Barney Cabinet K. Mantey Camera-shutter J. H. Polberg Can-closure lock F. B. Heiser
Burglar-alarmL. M. Pratt
Burner L. E. Shaw
Cabinet. K. Mantey
Camera-shutter. J. H. Polberg Can-closure lock. F. B. Heiser Candy-coating machine. J. Werner
Car-brake gearC. II. Howard et al.
Car-couplingR. E. L. Janney et al. Car-couplingR. E. L. Janney
Car-coupling
Car-bover. Car-bover. Car-mover.
Car, Railway- E. Mittag Car-replacer J. T. Cremans Car street-indicator A. M. Wastell Card-holder W. H. Peak
Car street-indicatorA. M. Wastell Card-holderW. H. Peak
Carpet-sweeper. II. Stokes Cavriage-wrench
Cash-dox
Cash-register
Centrifugal separators, Center tube for S. A. Ekehorn
Chair-braceA. B. Russell Chimney-topF. L. J. Boettcher
Centrifugal separators, Center tube for
Cigarette-tipping machineR. R. Karich Circuit-breaker. E. Johnson
Circuit-breakerW. S. Ryan Clamp B. A. Peterson
Clamping mechanismL. H. Vold
Cleat. J. G. Morris Clevis. E. Prechel Climbing device. G. R. Bair Clock-gong. A. W. Owen Clock-pendulum having alternating rotary
Climbing device. G. R. Bair
Clock-pendulum having alternating rotary
Clock-pendulum having alternating rotary movement. C. Grivolas Clothes-drier. G. R. Howell Clothes-wringer. L. C. Smith Clutch. J. Craig Clutch, Automatic. W. Klocke Clutch, Automatic. W. Klocke et al. Clutch-disk. C. E. Cox Clutch for power-presses. J. J. Flynn Clutch, Friction. H. D. Baldridge Clutch mechanism. C. Muchleisen Clutch. Pipe-lifting. R. Schoof Coffee-pot. H. A. Pike
Clutch Automatic W. Klocka
Clutch, AutomaticW. Klocke et al.
Clutch for power-presses. J. J. Flynn Clutch Existing II D. Paldvidge
Clutch Ping lifting P. Schapf
Coffee-pot. II. A. Pike
Coffice-pot. II. A. Pike Coin-controlled apparatus. W. S. Hendren Coin-holder. F. Vandervoort Coking-furnace. L. L. Summers
Cooking-oven L. L. Summers
Cooking-oven. L. L. Summers Collar adjuster, Horse. B. J. Hickman Composing-machines, Font-selecting mech- anism for monoline. W. E. Bertram Composing-machines, Matrix selecting and
anism for monolineW. E. Bertram Composing-machines, Matrix selecting and
Concrete construction, Reinforced.S. Giletti
Concrete floating bodyA. Holm Concrete-form, AdjustableB. F. Seibert
Concrete railway-tie and rail-fastening, Re- inforcedD. W. Hartsaw Concrete railway-track supportA. Stark
Concepto timboring for mino-chatte Metal-
reinforced
Confections, Stringing device for makingF. II. Page Contact-fingerII. A. Steen
Contact-finger

NTIVE AGE PUBLISHING	CO., 9	18	F S
Convertible seat and bedC. F	Perciv	al	Fl
Convertible seat and bed. C. F. Cooker, Steam- S. S. Cooler. Cord-holder W. V. Cork-stringing machine A. Cotton-gin. S. D. Cotton-grader R. Counting T. Counting T	Eccleste P. Go	od 011	F1 F1 F1
Cork-stringing machineA.	P. Wa	er t t	Fl Fl
Cotton-graderR.	H. Smi	th	Fl. Fc
Cover for household utensils R	C Wile	211	Fe Fe
Crate, Collapsible . A. Crate, Folding . L. Cremated bodies, Contrivance for	. P. Coc	or ok	Fo Fo
Crib Balve	Marso	en sts	Fr
Crossing-signal. T. M. Crusher and pulverizer. F. L.	Flaher Buchan	ty nn	Fu
Crossing-signalT. M. Crusher and pulverizerF. L. Current-controlling deviceA Curtain and shade support, Comb	. J. Clin	ne ••	Fu Fu
Curtain-bracket	. Wana	ee •••	Ga
Curtain-stretcher P. O. Cuts or blocks, Apparatus for red thickness of G. Damper, Antomatic stove- W. Decoration, Artificial. Detachable-tooth fork. P. C. Pau Detergent and disinfectant for wens, serges, and other goods, ing C. A. Die-stock J. Disinfectant holder or container J. R. Display apparatus L. Display-case P. Display-case P. Display-case, D. Display-rack, Roll-holding J. Distilling A. G. W. Ditch fish-screen A. Door, Cellar- C. M. C. Door-clamps, Attachment for F.	Holmqui .ucing_tl	st	Ga
Damper, Automatic stoveW.	F. Arbu R. Larse	rg on	Gs Gs
Detachable-tooth forkP. C. Pau	J. Schae Isen et :	ek ul,	Ge Ge Ge
ens, serges, and other goods,	oru woc Nap-rai)]- [s-	Gs
Die-stock. J.	A. Bech	er	Gr I
Display appearates	C. Rog	ie ch	Ge
Display-case P. Display-case D.	Rapopo Weinsto	ek	Gi
Display-rack, Roll-holdingJ. DistillingA. G. W.	D. Cape aterhou	rs se	G1
Ditch fish-screenA. Door, CellarC. M. (J. Coll Gullieks	ar on	G1 G1
Door closer and check	A PTOU	21)	G1 - G1
Door, Convertible screen	M. Mill Shedlo	er el:	
Door lock, Sliding	F. Ritch X. Barb	el ev	Gl Gr
Door sill or saddle, Adjustable, J. Door-stop. H. Doowel and tongue-and-groove joi bination. A. Draft-rigging. S. A. Draft-rigging, Friction. J. F. Dredger. C. W. Drier. C. F. Driet and condenser. O. Drying apparatus. Drying apparatus. Drying in a point of the property	G. Voig int, Coi	nt n-	(f) (f) (f)
Draft-rigging S. A.	McClell:	ra m	Gi
Driedger C. W.	'. Balla ' Marri	rd t+	Gi Gi
Drier and condenserO. S	š. Šleep K. Wei	er	Gi
Drying-machineS. C. Drill	Keitli, J Clemen	fr.	Gr Gr
Drill forging and shavpening ma	chine Borkma	in	Gy H:
Dyes and making same, Morda azo	nt-dyei: Richa	ag rd	H
Edger-guide P. F. Lu	oth of	1	II: II: H:
Egg-beater M. Electric-circuit closer J. A. Kennedy- Electric machine. Dynamo W. B. Kouwenho Electrical conductors, Automatic	B. Ofs	en ::	H;
Electric machine, Dynamo	Mettreg	or J	H
Electrical conductors, Automatic	Cut-o	ut M	Hi Hi
forM. G. Electrical pull-sockets, Chain-guid D. P. W.	folhaunt	Or	H:
Electrical switchJ. I Electrodes for arc-lamps. Manufac	z. Wrig cture of	ht	H_0
A. Blor Elevated carrier A. Flevator E. S Elevator G. J. Elevator G. Ele	idel et : H. Nell	$^{\mathrm{1l.}}$	He
Elevator Lock J.	chuchar E. Boy	dt e	H _i
Elevator signaling apparatus. J. X	U, Smi L Graha	m	H
Elevators, Pilot-light system for. P. Embroidering-machine shuttle me	T. Keni	iy	In In
Engine	Schoente	HG.	In
Engine-indicator. Engine-reversing mechanism, Ste	J. F. G	ill	Tre
	A Toliv	0.11	Je Jo
Engine-starting mechanism, Inte- bustionH. B. and C. G. V Engraving or preparation of stee	Vhitehe: el dies	ad or	Ki
Engraving or preparation of stee rollers. J. T. R. Enzym. J. Enzym. Amylolytic. J. Enzym. Amylolytic. J.	awsthor Takami	ne ne	Kı
Enzym, Amylolytic. J. Equalizing device	Takami 7. Guyte Papa	ne on	Kı Kı Kı
Explosion-engineE. I.	. Thom . Thom	as as	Ki
Ellym, Amylolytic. Equalizing device. W Excavator, Drainage- M. G Explosion-engine. E. I Explosive-engine. F. Extension-table. E. J Extension-table, Round-top. C. Eyeglasses. I Fabric and treating the same. Fan, Portable thermal C. J. Rams Enget. B. V	. Rober	ts	Kı
Eyeglasses	L. F. A N. Hirs	dt ch	Kı La
			La La
Feed-bag support	J. Broy	vn	La
Feeding deviceL. Fence-post braceH. F. vo Fertilizer-distributer and seed-drop	on Enge oper. Coi	ln nı-	La
Fibrons plants. Waching for tres	i. Wess	on.	La La
File indicator, Duplicate-sales-sli	M. Sto:	ne 	La La
Filing or planing toolI	E. Vern	er er	La
Filing or planing tool. I. Filling-machine. F. C. H. St. Filter. Air. S. P. W. Fire-alarm. F. Errogeopo	eisenste Simon	in vi	La La
Fire-escape. W H	.G. Bus	āt ns	La La
Fire-escape Fire-hydrant. W. H Fire-protectorR. C Fireplace. L. C. Kreu Fireproof beam. G. V	Straig tzer et a	ht il.	La La
Fireproof beamG. V Fireproof shutterR.	V. Broo EByri	ks ne	La Le
Fireproof shutter. R. Fish-hook. N. Fish-hook. F. I Fish net and trap. R. O.	B. Rand I. Pardo	al on	Le
Fish net and trapR. O. Fluid-controlling deviceP.	Mournia Planting	en ga	Le Li

-	
luid-pressure brakelnid-pressure engine	W. Phillips
luid-pressure brake	M. Dingfelder Witherspoon O. Haselan
lying-machine	J. Zimmerli P. McLaughlin
manufacturingH,	Apparaths forR. Meister A. Steinmetz
olding tableorce-feed lubricator, Duplex. ruit-seeding machine	C. E. QuinlanA. E. SchadG. L. Langer
ume-condenserT. urnace	de Benedictis .E. P. Selden
urnace practice urnaces, Means for controll	H. M. Parson ing the draft
ameame apparatus	M. M. McClay M. Read
ame apparatusD. ame-board, Puzzle arment-supporter hook	B. LittlefieldH. Edinger .R. A. Moore
as-heaterJ. as-meterJ. as mixture. Making a	.W. R. Kloeb R. Armstrong
aspipe safety attachmentE.	R. Schoolfield
paratus for deodorizing the	exhaust A. Lemberg
lying-machine. S. A. lying-machine. S. lying-mac	W. H. Parsons W. Henderson same, Metal
lass fasteuing, PlateS. lass, Method and apparatus sheet lass. Method and apparatus	L. Hoage C.MacDowney for drawing
sheet lass. Method and apparatus ing	J. Players for marver-
lazing roofs and the like v Means for	vithout putty, H. Knobel
rain-binder	J. Dangel P. Deats
rate for water-gas and other	apparatns
lass. Method and apparatus ing lazing roofs and the like v Means for lycerin, Treating (Reissne). rain-binder rape-ponnace heater rass-catcher rate for water-gas and other rave-brace rave-protector rease and oil extracting ap rinding device rinding-disk un-shell attachment W yrocycle ammer-fastener ammer ammer-drill ammock-support. A. A. Se	A. H. HavardJ. Biggs paratns
rinding devicerinding-disk	C. Edgerton I. P. Nichols T. Kihlgren
un-shell attachment	E. N. Burnett E. N. Darrow H. F. Hyman
ammer ammer-drill	M. E. Perring .A. H. Taylor chimmel et al.
arrow-cartay and stock rackay-fork. Grapple.	.D. B. Frisby F. Cowles .D. D. Miller
ammer-archer ammer-drill ammock-support. A. A. Scarrow-cart. ay and stock rack ay-fork, Grapple. ay-sweep ead-gear. N. feadlight for cars, Dirigible. linge. N. feadlight for cars, Dirigible. linge. H. oe, Seeding- opple. orse-overshoe orse-overshoe orse-overshoe orse-claup. A ose-coupling. H. ydraulic systems, Safety d lydraulic transmission mech	N. Goodman
inge	V. H. Danner W. Johnstone
oppleorse-overshoe	J. F. Herman
orse-overshoe orseshoe-calk, Removable ose-claup	H. D. Wendt G. Catelain
ydraulic systems, Safety d	evice for M. Karnasch
ydraulic transmission mech	anismC. C. Rich C. E. Lord
nsect-poisons, Ornamental ho L. nternal-combustion rotacy e	older for T. Bushbaum
F. S. and con, Refining molten pig	A. F. WrightJ. B. Nau J. Lighthody
isect-poisons, Ornamental hour internal-combustion rotary experience of the combustion rotary experience of the combustion of the combusti	D. A. Wright
neading and mixing machin	e, Dough L. Chandler
nife-switch	J. J. Hartley
nitting-machine, Circular-fa	shioning
nitting machine, Circular-ri nockdown box	J. L. Ware J. C. Morrison
adder, Combinationadder-usevs, Foot attachmen	t for
amp, ArcH amp, AutomobileL. amp, GasoleneH	. Friedrichsen I. Wogenstahl I. C. Albrecht
amp, Incandescent electric.) amp lock, Incandescent(amp shade-holder, Electric-	V. R. Whitney C. W. Truloek (2 pats.)
ineading and mixing machin nife. Inife-switch. Init fabrics, Trimming attack chines for uniting. Initting machine, Circular-fall nockdown box. Initting machine, Circular-rike nockdown box. Initting machine had nockdown box. Initting machine nockdown box. Initing machine nockdown box. Initing machine nockdown had nockdown box. Initing machine nockdown had nockdow	C. Tregoning C. Tregoning t for incan-
descent electricA. and-leveler antern-hoider H	F. W. Meyer R. Dix Waldschmidt
ap-robe attachmentW ast	. Hendrickson . F. Partridge Dickert et al
atch, GateL. athe, TurretJ. C. eaf holder Loose-	M. Lawrence Potter et al.
eather-working machine	F. J. Perkins
ighting-chains, Pull-knob for	G. A. King
-	

Lightuing-arresterA Lightning-arrester Line-casting machine	. R. Rheinberger E. W. Vogel C. Muehleisen
Line-casting machines, Co-sembling mechanism of	mposing and as- C. Muchleisen
anism of	C. Muchleisen ling apparatus
anism of Liquid cooling and dispens Liquid-heater Liquid-heater, Electrical Liquid heating or cooling	E. R. WatermanA. P. Nichols apparatus
Liquids electrolytically, App	npparatus G. W. Nistle paratus for treat-
LockLogging apparatus, Yieldab	A. O. TateA. Murawski le sheave-snpport
Loom thread-parting mech	anismE. Cunniff
Lubricator. Lubricator. Lubricator.	J. HuverstuhlH. J. LiverpoolC. Williams
Mail-bag catcher	C. R. FeistR. H. WhittedH. C. Allen
Mail-carrier Mailiug-card, Stcreoscopic. Malt-turning apparatus	J. T. Wiley H. S. Carley G. Weinbeer
Manure-spreader. Marking device for comband tertilizer-distributer	biued cultivators sW. D. Osbron
Mask, Base-ball	E. J. Lahan F. J. Kristofek F. J. Kristofek
Measure, Log	nstrnment
Measuring device, Liquid Metal-binding-strip machin Metal-entting machine	e.H. P. Thornton
Metallic tie and rail-fasterJ. Micrometer-protractor	ner (2 pats.) . O. Brooks et al. L. Fuchs
Milk-can and cover therefor Milking	orS. Shapiro D. T. Sharples -can attachment
for Miniug machine, Coal Miter-box	E. E. Good E. Hough J. A. Campbell
Mixing or ice-cream-freez	ing machinery S. H. EunnellM. Carroll
Monorail and truckJ	ualizer W. A. Kelly . J. Charbonneau
Mortising device	sA. Fulton sR. L. Norcross .G. E. Townsend
MufflerM. Music-leaf turner Music-turner	Karminski et alM. S. Leal, JrJ. W. Grimsley
Musical instrument, Autom Musical instrument, Autom Musical instruments, Cont	H. E. Freuch naticL. H. Maier roller-bellows for
Liquid-heater. Liquid-heater, Electrical. Liquid heating or cooling Liquids electrolytically, Apring. Lock. Logging apparatus, Yieldab for. Loom thread-parting mech Lubricator. Lubricator. Lubricator. Mail-bag catcher. Mail-box. Mail-box coin-holder. Mail-box coin-holder. Mail-carrier. Mailiug-card, Stereoscopic. Malt-turning apparatus. Manure-spreader. Marking device for comband fertilizer-distributer. Mask, Base-ball. Match-box. Match-box or the like. Measure, Log Measuring and recording in Measuring device, Liquid Metal-binding-strip machine. Metal-criting machine. Metal-criting machine. Metal-criting machine. Mik-can and cover thereform ilk-can and cover the	J. P. Hulder W. J. Mundy J. Nowak
Nut-lock Nut-lock Octadionols Octenediones Oil-burner Oil-burner tank Oil-switch Operating and reversing tank Optical-instrument attacht Ore-feeder	G. Merling et al. G. Merling et al. L.J. M. Bell
Oil-burner tank. Oil-switch	L. Alverson
Operating and reversing to the control of the contr	Tillinghast et al.
Ore-jig. Ores. Apparatns for elect	G. H. Williams
Ore-feeder. Ore-fig. Ores. Apparatns for elect ment of. Ozone-producing apparatus Painter's Pothook. Painting apparatus. Paper exhibitor, Wall- Paper-removing apparatus	c.C. G. ArmstrongR. C. Ryals
Paper exhibitor, Wall Paper-removing apparatus	G. R. Williams , Wall
Pasteurizing apparatus Pen, Fountain Peu, Self-filling fountain-	A. Tiesse II. B. Levy J. Ullrich
Penholder Pencil Perch. Bird and fowl	E. A. Ableman C. A. Gaiser .H. F. Seeberger
Piano-action, Pneumatic Piano-violin, Automatic Pianos, Center panel for	A. G. GulbransenL. Bajde upright player
Picture machine, Moving- Pin	W. A. Bein E. R. Yanch J. E. Potter
Pipe-coupling	R. L. Graves W. Austin F. Robinson
Pipe-coupling Pipe coupling, TrainW. Pipe separator, Drain	Z. Pulliam et al. J. M. McCarthy
Pipe-support Planter, Garden-seed Plauter, Seed	I. A. Miunick W. A. Hancock J. F. Bly
Planting device. Plastic or adhesive mate for mixing and applying	erials. Apparatus
Plow attachmentA. R., A. M.,	and W. S. White
Plows, Furrow-subsoil-bre	aking attachmentA. Kenworthy W. Keller
Paper exhibitor, Wall-Paper-removing apparatus Paper-removing apparatus Pen, Fountain-Peu, Self-filling fountain-Peu, Self-filling fountain-Penholder Pencil Perch, Bird and fowl Piano-action, Pneumatic. Piano-violin, Automatic. Pianos, Center panel for Picture machine, Moving-Pin. Pipe-coupling. Pipe-coupling. Pipe-coupling. Pipe-coupling. Pipe-coupling. Pipe-support. Planter, Garden-seed. Planting device. Planting device. Plastic or adhesive mate for mixing and applying Plow. Plow attachment. A. R. A. M., Plow, Engine-Plows, Furrow-subsoil-bre for. Plumbing system. Portable heater. Post-hole digger. Postal cash-sales receptace Power-transmitting maching Presses, Ink-drier and star for.	O. C. Knipe A. A. Pope leE. S. Walker
Power-transmitting machi Presses, Ink-drier and sta- for	ueJ. T. Hume tic-charge reducer M. L. Lane
Printing device Ticket-	Y. E. Springsteen
Printing-machine offset n Printing machinery Printing-plates for bendi	H. M. Barber D. Greenhill ng, Preparing
Projecting apparatus.H. C Protective deviceE	Ē. Flower Land C. W. White . E. F. Creighton
Pump. Pump. Pump, Air	J. AstromJ. S. Fasting J. Schlosser et al.

Pump, Double-action forceJ. Henrikson Pump for oil and like wellsC. W. Bell Pump governor. AirD. W. Ridinger Pump, Mercury vacuumII. A. Fleuss Pump, OilC. Barnes Pump joilC. Barnes Pumping-jacketIII. G. Smith Pumping machineryD. J. Kiser Push-button switchE. D. Stalfort Quilting-frame. CollapsibleII. M. Brooks Rail-bandling deviceB. Harper Rail-joint, InsulatedW. L. De Renner Rail-tie. CompositeW. J. Hohnhorst Railway signal-semaphoreG. H. Pfeil Railway-spikeR. Seidelinger Railway-tie, MetallicR. Seidelinger Railway-tie, MetallicR. Seidelinger Railway-tie, Metallic
Pump, Mercury vacunmH. A. Fleuss Pump, OilC. Barnes Pumping-jacketH. G. Smith
Punping hackmery
Rail-joint, InsulatedW. L. De Remer Rail-tieJ. E. Bliss Rail-tie, CompositeW. J. Hobmhorst
Railway sighal-semaphoreG. H. Pteli Railway-spikeR. Begg Railway-tieJ. E. Gardner Railway-tie. MetallicR. Seidelinger
Railway-tie, MetallicF. L. Hewel RazorW. H. Nicholls Razor blade, SafetyA. Alverez
Razor-honing machineC. A. Mann Razor, SafetyJ. H. Pacc Razor, SafetyF. D. Jones
L. Kubersky et al. Recording and indicating apparatus, Combined. H. Wilson et al.
Recording apparatusJ. A. Offisted Recording instrument, GraphicR. C. Lunphier Reduction systemA. J. Morlock
Reflector for search-lights and the like C. A. Parsons et al. RegisterJ. S. Beatty
Relay, Electrical E. E. Clement Resilient wheel S. Williams Resistance compound W. E. Gardner Reforts Coke-discharging apparatus for
verticalS. Glover et al. Ribbon-feeding mechanismA. H. Bates Ring-cutting machine.J. M. Flugstad et al.
Rivet-holder P. W. Hershberger Rollers, Adjusting mechanism for H. Rosenthal Roue-laying machine C. W. Sponscl
Rotary engineR. S. White, Jr. Rotary explosive-engineC. H. Vom Baur Safe and drawer, Kitchen-W. W. Atkinson
Sanding, abrading, or polishing machine. F. Schimmel Saw-handleJ. Kankiu Saw swage and shaperL. G. McKam
Scaffold, LadderF. C. Valentine Scraper for cleaning lake and river shores .C. W. Stubbs
Scribber and method of mingling gas and liquid and creating pressure in the gas
Seasickness and also applicable to lifts on board ship, Device for preventing H. Baumgartner Sewing-machine attachmentD. B. Ashman Scwing-machine attachmentL. M. Tynes
Sewing-machine attachment. D. B. Ashman Scwing-machine attachment. L. M. Tynes Sewing-machine feed mechanism
Sewing-machine guard
Sewing-machine attachmentL. M. Tynes Sewing-machine feed mechanism
Shovel-tooth point, Detachable
Sign device
Signals, Means for securing roundels in semaphoreE. J. Relph Signaling system, WirelessS. Eisenstein Sink and nump support. H. H. Macomber
Shoe-cutting tools, Awl attachment for F. G. Pavelec Shovel-tooth point, Detachable C. H. Mulroney et al. Shnttle-replenishing mechanism M. Schoenfeld Sign device
Skirt (Reissue)W. Padernacht Small-arm, AutomaticJ. Eastwick Small-arms with one or several locks, Auto- matic safety device for J. Tambour
Small-arms with one or several locks, Automatic safety device forJ. Tambour Smoke-consumiug and fuel-coonomizing apparatusW. Hoy et al. Snatch-blockM. W. Hendrich Soap-holding deviceM. W. Hendrich Sound recording and reproducing instrumentJ. Morton Speed and power transmitting mechanismE. Schoonmaker SpillwayG. E. Stickney
Sound recording and reproducing instrumentJ. Morton Speed and power transmitting mechanism
Spillway
Spillway
Spring
Square (Reissue)
Stalk-cutterJ. L. Bird Stalk-cutterR. A. Matthews Stamps and paper strips, Apparatus for dis- pensing postage-
Stanchion, Cattle
Spring-clasp for stocking-supporters and the like. E. S. Avis Square. A. L. Gipson Square (Reissue). N. B. McGrath Square, Combination try G. A. Brown Stalk-chopping roller. W. W. Lowe Stalk-cutter. J. L. Bird Stalk-cutter. R. A. Matthews Stamps and paper strips, Apparatus for dispensing postage J. Morris Stanchion. Cattle W. Stuckey Station indicator or advertiser. B. R. Skinner Stay-irou. E. J. Wells Steam-boiler. C. C. Thomas Steering mechanism. F. Rouiss Stem winding and setting mechanism. A. Sim
Stein Wholing and Setting inechanism
Stove and range attachment. R. E. Esplen
Stove, Cooking
Edenor roussississississississississississississi

D or Thombile and the control of the	Constant and House Co. C. Torres
Pump, Double-action forceJ. Henrikson Pump for oil and like wellsC. W. Bell	Surgical applianceS. G. Leyson Surveying instrumentJ. Barbow
Pump governor, AirD. W. Ridinger	Switch-lock
Pump, Mercury vacunmH. A. Fleuss Pump, Oil	Switch-stand
Pumping-jacket	lective
Push-button switchE. D. Stalfort	Switches, Tripping-device regulator for elec-
Quilting-frame, CollapsibleII, M. Brooks Rail-handling deviceB. Harper	Tank construction, OilJ. G. Hitchfield
Rail-joint, InsulatedW. L. De Remer	Tap and die holderL. H. Rogers
Rail-tieJ. E. Bliss Rail-tie, CompositeW. J. Hohnhorst	Tap for dispensing liquid under pressure
Railway signal-semaphorcG. H. Pfeil	Tapping attachment, Yielding, F. P. Miller
Railway-spikeR. Begg Railway-tieJ. E. Gardner	Telegraph, PrintingG. S. Tiffany Telegraph recorder, Ship'sE. A. Henkle
Railway-tie, MetallicR. Seidelinger Railway-tie, MetallicF. E. Hewel	Telegraph recorder, Ship'sH. Wilson et al. Telegraphic apparatus, Wireless
Razor	M. A. Parisano
Razor blade, SafetyA. Alverez Razor-honing machineC. A. Mann	Telephone-exchange system
Razor, SafetyJ. H. Pacc	Telephonic relay systemC. G. Ashley Telescope, Single-field double-sighting
Razor, SafetyF. D. Jones Receptacle, Compartment	G. N. Saegmuller
Recording and indicating apparatus, Com-	Tenoning-machine, HandH. O. Taylor
binedH. Wilson et al.	Thill-couplingJ. F. Galvin Thread-finishing machineW. C. Keyworth
Recording apparatusJ. A. Olmsted Recording instrument, Graphic	Thread guide and cleanerJ. F. Schenck Tie-pinL. A. Rizzuto
R. C. Lapphier	Time-lock for safes and vaultsC. A. Miller
Reduction systemA. J. Morlock Reflector for search-lights and the like	Time-lock for safes and vaults, W. H. Taylor Timer and distributer-magneto, Combined
C. A. Parsons et al. RegisterJ. S. Beatty	Tire
Relay, ElectricalE. E. Clement	Tire, AutomobileS. J. Moore
Resilient wheelS. S. Williams Resistance compoundW. E. Gardner	Tire for automobile-wheels, Cushioned
Retorts, Coke-discharging apparatus for verticalS. Glover et al.	Tire, Sectional vehicleA. II. Peloubet
vertical	Tire-shoeR. Rowley et al. Tire, VehicleM. A. Phillips
Ring-cutting machine. J. M. Flugstad et al.	Toy, Dancing
Rivet-holderP. W. Hershberger Rollers, Adjusting mechanism for	Toy, OpticalW. H. S. Pearce Toy pistolG. J. J. Clark
H. Rosenthal	Train-line attachment, Automatic safety.
Rope-laying machineC. W. Sponsol Rotary engineR. S. White, Jr.	
Rotary explosive-engineC. H. Vom Baur Safe and drawer, KitchenW. W. Atkinson	Transmission mechanismE. A. Thiem Trolley-pole attachmentF. H. Crane
Sanding, abrading, or polishing machineF. Schimmel	Trolley-switch
Saw-handleJ. Rankiu	Truck, CarS. P. Bush
Saw swage and shaperL. G. McKam Scaffold, LadderF. C. Valentine	Truck for harvesters, PoleC. A. A. Rand Truing-machineO. E. Hunt
Scraper for cleaning lake and river shores	Turbines, Governing mechanism for low- pressure
Scrubber and method of mingling gas and	Twist-drill
liquid and creating pressure in the gas	Type-setting-machine slug-indicator
Sealing deviceE. Cathels Seasickness and also applicable to lifts on	Type-writerG. G. Going et al. Type-writing machineE. F. M. Branson
board ship, Device for preventing	Type-writing machineJ. J. Cooper
Sewing-machine attachment. D. B. Ashman	Type-writing machineA. S. Dennis Umbrella, FoldingG. Mroczkowski
Sewing-machine attachmentL. M. Tynes Sewing-machine feed mechanism	Umbrella-markerJ. A. Day
C. A. Dearborn	Universal jointII. E. and H. O. Spade
Sewing-machine guard	Valve. E. J. Kiley Valve, Air- C. E. Norman
Sharpening machines, Carriage for gang-	Valve and attachment therefor, Radiator J. A. Serrell
saw- J. P. Hedstrom Shoe E. A. Dahlhaus	Valve-control systemM. B. Carroll
Shoe-cutting tools, Awl attachment for	Valve, GateC. L. Bowker Valve mechanismG. H. Watt
Shovel-tooth point, Detachable	Valve, Radiator air
C. H. Mulronev et al.	Valve, ReliefJ. S. Thurman
Shuttle-replenishing mechanism	Valve-reversing gearO. A. Donath Valve-starter alarmJ. A. Poche
Sign device	Valve, TireF. B. Carlisle Vaup-markerJ. F. Rogers
Signals. Means for securing roundels in	Vault-cover
semaphore	Vehicle-spindle. J. C. Hoover Vehicle-step. W. Lewis
Sink and pump supportH. H. Macomber	Vehicle storm-top (Reissue)W. A. Hunter
Siphon	Vehicle-wheel
Skirt (Reissue)	Vending-machineJ. Schiemer
Small-arm, AutomaticJ. Eastwick Small-arms with one or several locks. Anto-	Vending-machine
matic safety device forJ. Tambour	Vending machine, TicketB. F. McGrath Ventilator (Reissue)W. J. Lindemeyer
Smoke-consuming and fuel-conomizing apparatus	Vessel. Electrically-heatedM. Marzetti Veterinary molar-extractorS. B. Dunn
Snatch-block C. W. Russell	Voting device Independent-
Soap-holding deviceM. W. Hendrich Sound recording and reproducing instru-	C. H. Ocumpaugh Voting-machine
mentJ. Morton Speed and power transmitting mechanism	Voting-machines, Key-resetting mechanism forC. H. Ocumpangh
E Schoonmaker	Wagon stop-boardR. E. Lawler et al.
Spillway	Wardrobes, Garment-support for J. T. Batts Washbasin, AdjustableD. H. Donachy
G. E. Spofford Splice-bar for electrically-welded joints	Washbasins or the like, Plug-operated means for
	Washing-machineA. M. Burnham
Spring	Washing-machineJ. R. Carter Washing-machineF. V. Pepper
Spring-clasp for stocking-supporters and the likeE. S. Avis	Watch winding-indicatorW. H. Ebelhare Water-heater (2 pats.)J. W. Gamble
Square	Water-softening apparatusA. R. Holmen
Square, Combination tryG. A. Brown Stalk-chopping rollerW. W. Lowe	Watering-trough (Reissue)A. C. Michael
Stalk-cutter J. L. Bird	Waterproof switchD. M. Lang Weather-strip, MetalJ. C. McMahon
Stalk-cutter	Wheel
pensing postage	Windmill
Stanchion. Cattle	WindmillJ. R. Sawyers
Stay-irouE. J. Wells Steam-boiler C. C. Thomas	Window
Steering mechanismF. Rouiss	Window-came
Stem winding and setting mechanism A. Sim	Wire-uetting machineF. N. Roehrich
Stench - machine character - punches, Mak-	Wire-tightenerJ. Flint
ing	Wood for bending, Apparatus for preparing and softening
Stoker, Mechanical	WrenchO. A. Nordlund
R. F. Osboru et al. Stove and range attachmeutR. E. Esplen	WrenchF. C. Bradley
Stove, CookingG. C. Wadleigh	Wrench
Strip-serving deviceG. R. Wyman Stuffing-boxC. D. Campbell	wiehen
Suction-rollJ. Kieren Sugar, ManufacturingW. Henning	Wrench (2 pats.)F. Hachmann Yarn-cleansing apparatusR. G. Jeunings Yoke center, NeckM. Marks

Issued May 16, 1911.

MECHANICAL PATENTS.
Acid or alkali resisting articles, Malang
Advertiser, Automatically-operated fluminated. L. L. Mack et al. Aerodrome F. J. Elsas Aeroplane. L. L. Ault Aeronlanes Balance-controller for
V. M. Kutscha Agricultural implement. R. Coates Air-brake system. G. L. lekes Air-compressor. H. E. Bailey Alcohol and similar liquids. Purification of E. Guillaum Alloys, Producing titaulum. J. B. Huffard
galvanic metallic coatings, Treating
Amusement applianceR. C. Barrie
Amusement device. I. A. Dis Animal-trap. I. Morris Ash-pan. G. Sprath y Atomizer or volatilizer. G. H. Goldsmith et al. Autographic register. C. H. Wilson et al. Automobile-buffer. A. L. McGregor Automobile-lock. C. R. Parker et al. Awning. L. Kasan
Awning
Bagging-machine A. M. Bates Bail G. Russell Baling-press A. E. Cummins Carrol lifter H. W. Patter
Deating-engine used in the manufacture of
paper (Reissue). A. Mason et al. Bed for iuvalidsC. R. Koster Bed, SetteeF. L. Andren Eelt-adjusterJ. N. Loutensock Belt, DrivingC. O. Gehrckens Belt. RopeA. Luckweil Eilge bodies, MakingR. W. Hardie Binder, Loose-leafE. Wienss et al. Binder, Loose-leafJ. C. Dawson Binder, Loose-leafD. W. Colby Bird-cages, Food-receptacle for J. B. Cousin BlackboardT. R. Spivey Blind, Detachable awning G. W. Pearson
Binder, Loose-leaf J. C. Dawson Binder, Loose-leaf D. W. Colby Bird-cages, Food-receptacle for J. B. Cousin Blackboard T. R. Spivey Blind, Detachable awning G. W. Pearson
Elock-signal joint, Automatic
Book Record T. M. Eynon
Book, Statement and balanceL. C. Van Voorhis Boot or shoeJ. J. Mulconroy et al. Bottle-cleaning machine or apparatus
Bottle-closure
Book, Record
7) 1 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Brush for bronzing, gilding and the like, Buffing
Butter substitutes, Manufacture of T. E. Smith
for crushing. S. Andrychewicz Cable or conductor hanger. J. J. Walsh Calculating-machine. W. P. Quentell Can-opener. D. P. Baublits Car-bolster. M. D. Stewart Car brake, Railway- C. H. Howard et al. Car-coupling. P. Winsor Car door, Grain- A. Devan Car, Dump- II. S. Hart et al. Car, Dump- C. Gabriel Car, Dumping- C. Gabriel Car fender, Tram- E. L. Harriman Car frame, Passenger- A. Christianson Car friction-buffer, Railway-passenger- Car frict
Car brake, RailwayC. H. Howard et al. Car-coupling
Car, Dump
Car frame, PassengerA. Christianson Car friction-buffer, RailwayG. A. Johnson
Car friction-buffer, Railway-passenger J. F. O'Connor Car, PussengerD. McDonald
Car. Kanway motor W. S. Hovey et al. Car-roof
RailwayJ. F. O'Connor Carbon tetrachlorid, ProducingW. F. Doerslinger
Caster. H. W. Taylor Ceutrifugal drier. J. M. White Chain, Detachable-liuk. A. B. Taylor Chain link, Conveyer- P. Erickson
Chimney. F. M. Stiles Chuck, Tool- J. H. McLaughlin Churn. H. J. Warren Cigar-case. C. U. F. West
Cigarette papers, tubes, and the like, Machine for making
G. A. Johnson Car friction-buffer, Railway-passenger J. F. O'Connor Car, Passenger D. McDonald Car, Railway motor W. S. Hovey ct al. Car-roof. R. C. Dudley Car-roof. W. P. Murphy Car spring and friction buffer combined. RailwayJ. F. O'Connor Carbon tetrachlorid, Producing. W. F. Doerflinger Caster. H. W. Taylor C'eutrifugal drier. J. M. White Chain, Detachable-liuk. A. B. Taylor Chain link, Conveyer P. Erickson Chimney. F. M. Stiles Chuck, Tool J. H. McLaughlin Churn. H. J. Warren Cigar-case. C. U. F. West Cigarette papers, tubes, and the like, Machine for making. M. H. Avram Circuit-controller, Time. W. P. Allen Cistern. G. G. Ross Cleansing fluid and sheep-dip. W. G. Little Cloth spreader and guider. A. Birch Clutch. G. P. Salisbury Coaster-brake. G. Crawford Cock, Combined gas and water. A. E. Brion et al.
Cock, Stop
Coin-actuated mechanism F. J. Rowse Coke-oveu L. P. Palmer Coke-oven door L. C. Flaccus

Collar	(
Committee Construction (2) pats.	(
Concrete-moldJ. W. Westlake	(
Concrete-spreader for ditches, sidewalks, and other snrfaces G. W. Gale Concrete-structure bolster J. J. Lankford Controlling device F. H. Richards	(
	(
metal to and delivering the same from machines	(
II. E. Olsen et al.	(
Coupling device. M. G. McGnire Crane safety appliance, JibA. Patton	(
Crate or box forming machineE. Nitschmann	j I
Corset-fastening deviceJ. Danenmark Cotton-chopperR. A. Erwin et al. Coupling deviceM. G. McGnire Crane safety appliance, JibA. Patton Crate, FoldingM. A. Griffin Crate or box forming machine E. Nitschmann Crucible-lidW. and T. Ross CultivatorH. R. Alkire CultivatorL. Marsili Cultivator and seeder, Combined E. B. Rahner]
(1 TT: 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -]
Curtain-stretcher, Self-squaring	!
Cut-off, Water M. J. Stephenson Cutlery, Trick II. Reinfeld Cutting and folding machine H. M. Barber]
Cutting and folding machine. H. M. Barber Cutting mechanism A. J. Seger et al. Decorticating-machine S. Gomez et al. Dental bridges and the like, Forming]
Disinfecting-cabinet. W. C. Bnrrichter Display-cabinet. R. H. Reid Door, Folding. C. H. Anderson]
Door, FoldingR. H. Reid Door, FoldingC. H. Anderson Door-locking mechanism, Emergency-exit)
Door-locking mechanism, Emergency-exit E. A. Freed Door-operating mechanism, Dnnp-]
Door-snpporting structureT. V. Plice Dough and pastry goods, Apparatus for dry-	ì
Dough and pastry goods, Apparatus for dryingO. Wirz Dough-raising machineJ. Hollander Draft-rigging, FrictionJ. F. O'Connor]
Drying noupulverulent materials]
Drilling-rig, Combination standard and hydraulic]
dranlic. W. B. Wigle Drinking-fountain G. E. March et al. Drip-pan alarmC. T. Mallett Dust-collector W. E. Allington Dye, Antharcene M. A. Kunz	}
For drier T. Wiebo	1
Egg-rack. P. Weber Electric exchange system. A. T. Brown Floctric function	
Egg-tack. P. Weber Electric exchange system. A. T. Brown Electric furnace. E. C. Speiden Electric heater. C. S. Hawley Electric heater. J. F. McElroy Electric machine for therapentic purposes. R. H. Wappler Electrical distance control A. Aichele]
R. H. Wappler Electrical distance controlA. Aichele]
Electrical distance controlA. Alchele Electrical energy into mechanical move- ment, Means for converting. W. Jandus Electromagnetic apparatusM. Walker	3
Elevator attachment	
tric. W. McDonald	
plosive	
Engine primer, GasoleneC. E. Arnold Engines, Induction-conduit for explosion	
Engines, Pressure-regulator for internal combustion. R. Huff Engines, Presh-rod for delivery-valves of in-	
Engines, Push-rod for delivery-valves of internal-combustionP. Kron	
ternal-combustion. P. Kron Excavator. W. G. Lawrence Excavator, Rotary. T. Fahey Exerciser, Body- J. Singer	
Exposion-engine	
Explosion-engine. II. E. Coffin Eyeglass-chain reel. L. T. Scott Fabrics, Device for restoring nap to G. B. Dexter Fare register and recorder. J. F. Olumer Fastening. A. H. Bobb	
Producing edible and odorless.G. C. Water	
Freeding appliance, Boiler- W. B. D. Ponninghaus File, Account- File, Rotary G. E. Metcalf Film or lenf, Gilding Filter, Cleansing- Fire-alarm, Automatic Fire-alarm, Prockedes G. Auth Files G. Auth	
File, Account E. J. Vickers File, Rotary G. E. Metcalf Film or leaf, Gilding K. E. Olson	
Filter, Cleansing A. J. Madden Fire-alarm, Automatic II. Becker Fire-alarm, Break-glass C. Auth	
Fire-excupe	
Fire-alarm, Automatic. II. Becker Fire-alarm, Break-glass C. Auth Fire-escape D. J. Roche Fire-extinguisher, Antomatic. G. W. Bechtold Firearm C. F. Lefever Firearm, Automatic R. Frommer Fish-screen T. A. Howard Fishing-lob C. Davis Flexible tube J. J. Mulcontoy et al. Flume-gate E. O. Thomason Fly-trap C. C. Carpenter Flying-machine C. N. Newcomb	
Flamig-bon. Flexible tube. J. J. Mulconvoy et al. Flume-gate. E. O. Thomason	
Fly-trap. C. C. Carpenter Flying-machine C. N. Newcomb Flying-machine E. L. Madden Forging-press F. Killefer	
Forging-pressF. Killefer ForkJ. D. Wall Fruit-pickerS. L. Wiseman	
Fork J. D. Wall Fruit-picker S. L. Wiseman Furnace W. H. Hurst Furnace-eharging apparatus, Blast J. Kennedy Garment-fastener M. E. Kintz Carment Lujon C. O. Terwillize	
Garment-fastener	
Garment, Union	
Gas generator, AcctyleneH. N. Lines	

Gas-heated ironJ. H. Brownlee Gas-light attachmentC. W. Groening	
THE HELL RELECTION OF THE CHARLES	
Gas-light attachinent	
fas-producer. J. A. Waldburger Gas-producer. J. Stewart	
Gas-producer-feeding apparatusL. Lee Gas-washerW. B. Chapman	
Gases produced in the smelting or treatment of ores, Apparatus for treating acidulous	
Gate for stopping runaway animals G. W. Beal Gate-hanger	
Gate-hanger. F. P. Berndt Gearing, Transmission- H. R. Wise Gearing, Transmission- F. H. Jones Glass-shearing device W. J. Miller Gramophone-record and holder for the same. J. R. Craig, Jr. Grinding-machine C. K. Berg et al. Grinding-mill W. P. Harris et al. Grinding-mill C. W. P. Harris et al. Gum, Manufacture of chewing- A. M. Price Hame-fastencr C. G. Gerlach Hammer-drill A. H. Taylor Harrow F. L. Grove	
Glass-shearing device	
Grinding-machineL. F. Fales Grinding-machineC. K. Berg et al.	
Grim, Manufacture of chewing A. M. Price Hame-fastener C. G. Gerlach	
Harvesters, Snapping-rolls for corn- J. A. Stone Hasp-fastener. L. Kehlet Pay-binder. W. Carson Hay-rake. C. Pearson Hocallight, Dirigible. W. E. Austin Heat-insulating vessel, Metallie. J. L. Fate Heating apparatus. L. A. Brigel Hinge, Adjustable. B. F. Foss Hinge, Adjustable. A. Varchmin et al. Hoisting and conveying apparatus. H. Weickel et al. Hopper, Charging. G. M. S. Tait Hops, Extracting. G. G. Smith	
Hay-nake, C. Pearson Headlight, Dirigible, W. B. Austin	
Heat-insulating vessel, Metallic. J. L. Fate teating apparatus L. A. Brigel	
Hinge, AdjustableA. Varchmin et al. Hoisting and conveying apparatus	
H. Weickel et al. Hopper, Charging G. M. S. Tait Hops Extracting G. G. Smith	
Hops, ExtractingG. G. Smith Horn and other article constructed from tlexible tubingE. Rubes Horn for motor-vehicles and other pur-	
Horn for motor-vehicles and other pur- poses	
poses. F. Berton Vorseshoc, Emergency- G. D. Snell Vose-coupling. C. F. W. Lasch Hose-nozzle. F. Wheatley Hose-supporter. S. Florsheim	
Hotbed	
Hose-supporter. S. Florsheim Hotbed. C. Abraham Hydrogen-peroxid solution, Preserving M. Schlaugk Ice-machine (2 pats.) H. D. Pownall luk-fountain H. Rolle Insect catcher and destroyer G. De Kerlegand Insulator M. E. Anderson Insulator W. Weicker Insulator H. R. Markel	
Insect catcher and destroyer	
Insulator. M. E. Anderson Insulator. W. Weicker Insulator II R. Markel	
Insulator. II. R. Markel Insulator-line-attaching device. L. W. Ridenour Prrigating system. J. E. Mills Jack-block and car-wheel clamp. M. Sexton	
Jack-block and ear-wheel clamp. M. Sexton Journal-bearing. J. E. Multfeld	
Journal-bearing, AntifrictionA. F. Howe Journal-box bearing, Railway-car	
Jack-block and car-wheel clamp. M. Sexton Journal-bearing. J. E. Muhlfeld Journal-bearing, Antifriction. A. F. Howe Journal-box bearing, Railway-car W. R. Clark Juice-extractor. E. F. Kandlbinder Keyless lock. O. J. Blakesley Ladder attachment. I. Drake Lamp-adjusting device, Suspended-electrics. S. Singer	
Ladder attachment	
Lamp, ArcA. Blondel	
Lamp, Inverted incandescent gas	
Lamp, ArcA. Blondel Lamp, Inverted incandescent gas J. T. Lister Lamp or like holder, Incandescent-electric II. O. Beige	
Lamp-socket, ClusterX. Weeks Lantern-globe lifterW. C. Embury Latch mechanismE. L. Ackerman	
Lamp-socket, Cluster N. Weeks Lantern-globe lifter W. C. Embury Latch mechanism E. L. Ackerman Lath-holder W. R. Hunter Lathe, Muitiple-spindle automatic.	
Lamp-socket, Cluster	
Lamp-socket, Cluster N. Weeks Lantern-globe lifter W. C. Embury Latch mechanism E. L. Ackerman Lath-holder W. R. Hunter Lathe, Multiple-spindle automatie O. A. Smith Lawn-chair and couch, Combination S. A. Ott Ledger, Loose-leaf R. B. Wilson Leus-mount J. Hergarten Level, Drainage- (Reissne). P. Gntwein, Jr. Lever-locking mechanism H. H. Wilburn Lighting-fixture L. E. Fitzsimons Lightning-arrester E. E. F. Creighton Limb-support G. T. Messler Lineman's protector H. E. Marshall Linotype-machine attachment R. W. Pittman Liquid-cooling tank, Portable. J. D. Ingram Liquid-fuel burner W. H. Burk et al. Lock W. F. Duckwitz	
Lamp-socket, Cluster N. Weeks Lantern-globe lifter W. C. Embury Latch mechanism E. L. Ackerman Lath-holder W. R. Hunter Lathe, Multiple-spindle automatie O. A. Smith Lawn-chair and couch, Combination S. A. Ott Ledger, Loose-leaf R. B. Wilson Leus-mount J. Hergarten Level, Drainage- (Reissne). P. Gntwein, Jr. Lever-locking mechanism H. H. Wilburn Lighting-fixture L. E. Fitzsimons Lightning-arrester E. E. F. Creighton Limb-support G. T. Messler Lineman's protector H. E. Marshall Linotype-machine attachment R. W. Pittman Liquid-cooling tank, Portable. J. D. Ingram Liquid-fuel burner W. H. Burk et al. Lock W. F. Duckwitz	
Lamp-socket, Cluster	

lolding-machine, HydraulicG. A. Oertzen
Iolding-machine, HydraulicG. A. Oertzen Iotor-starter or electric-circnit controller
erating electricW. A. T. Muller Hotors, Unit switch-control system for
A control system for electric E. Lehr Iower roller, Lawn F. J. Guy
Iowing-machineJ. and E. Botsch JufflerT. Donohne
Howing-machineJ. G. Fahr Howing-machineJ. and E. Botsch HufflerT. Donohne Husical instrument, Automatic L. H. Maier Kailing implementC. F. Crandall Hoodle-cutting deviceA. Gawenda et al. Hoggle Plast. F. Palagock
Koozle
out-lock. E. Dunning out-lock. T. W. Crozier
onl-seeds in open presses, itessing
watery solutions ofL. S. Van Westrum Dre dewatering and classifying apparatus
Nozzle. M. H. Hart Nozzle. Blast F. A. Babeock Yot-lock. F. A. Babeock Yot-lock. T. W. Crozier Oil-seeds in open presses. Pressing. A. Austerlitz Dils, fats, tar, asphalt, &c. Mannfacturing watery solutions of . L. S. Van Westrum Ore dewatering and classifying apparatus. R. P. Akins Package. A. Graffin v. Dyhrn Paddle-wheel for boat propulsion. C. F. Boorman Pail attachment, Milking G. A. Brown Paint and pigment. M. Herisson Paint compound. G. F. Smith
Pail attachment, Wilking G. A. Brown
Paint compound. G. F. Smith Paper-body can or receptacle. F. Rudolph Paper box. J. R. Myers Paper-fastener and label-holder, Combined.
Paper box
Paper-hanging machineJ. Atkinson Paper-machine feeding and drying appara-
Paper-fastener and label-holder, Combined. 1. Rittenhouse Paper-hanging machine
D. A. Smith et al. Caper-removing device, WallG. Ayres
'aper vessel, FoldingA. M. Kim Passenger - recorder and station - indicator, Combinedl. M. Reed
Paving, ArmoredP. P. McMenamin Paving, Interlocking armored
Paving material, Apparatus for and process of laying
Pen, RulingR. Namiki
Perforating-machine. J. Powers Permutation-lock for milk-cans. S. Peter Photography, Apparatus for color. R. Berthon R. Berthon Plano-action. I. Wrozina Plano-pedal, Anxiliary. J. R. Tyson Planos, Controlling device for self-playing. R. J. Bennett Planos, &c., Valve for player. L. H. Maier Picture-hanger. G. Johnson Pictures, Tunnel and plate-holder slide for X-ray. J. R. Kelley Pipe-coupling clamping-ring. L. P. Whitaker Pipe coupling. Train. E. L. Adams Pipe-banger. L. A. Carpenter et al. Planter. E. A. Eason Planter, Corn. R. H. Gardner Planter marker, Corn. R. Boldry Plow. W. H. Holselaw Plow. E. O. Gay
Piano-action R. Berthon Piano-action L. Wrozina Piano-nudel Auviliary L.P. Tyson
ianos. Controlling device for self-playingR. J. Bennett
Planos, &c., Valve for player-, L. H. Maier Picture-hanger. G. Johnson Pictures Trungl and plate-holder slide for
X-ray. J. R. Kelley Pipe-coupling clamping-ring.L. P. Whitaker
Pipe coupling, TrainE. L. Adams Pipe-hangerL. A. Carpenter et al. Planter E. A. Eason
Planter, CornR. H. Gardner Planter marker, CornR. Boldry
Plow H. Holsenaw Plow E. O. Gay Plow attachment C. Pucall Plow-fender J. P. Ertel Plow, Gang- (4 pats.) W. S. Graham Plow-handle J. E. Newberry Plow, Motor- C. H. Kohn Plows, Pole attachment for sulky- W. L. Paul Pneumatic-despatch-tube apparatus. J. G. Maclaren
Plow-fenderJ. P. Ertel Plow, Gang- (4 pats.)W. S. Graham Plow, boydlo
Plows, Pole attachment for sulky
Pneumatic-despatch-tube apparatus.
J. G. Maclaren Phenmatic-tube-apparatus terminal L. G. Bartlett Poke, Animal D. D. Pace
Poke, AnimalD. D. Pace Polyphase motorS. Sparrow Power systemL.W. Kirkland
Power systemA. H. Olmsted Power-transmitting mechanism.C.J. Menges
Polyphase motor. S. Sparrow Power system. J. W. Kirkland Power system. A. H. Olmsted Power-transmitting mechanism. C. J. Menges Printed matter, Locking-frame for. S. Krausz Printer's quoin. II. J. Dockendorf Printing. M. Schwarz
Printing M. Schwarz Printing and coating photographic postal
Printing
Printing-press E. J. and W. J. Barker et al.
Printing-pressD. W. Coster Printing-press counting attachment W. J. Ramsaier Printing-press delivery mechanism
Printing-press delivery mechanismJ. Bengough Printing-press plate-holder (2 pats).
K. M. and F. Schlueter, Jr. Printing-press, ProofR. O. Vandercook
Printing-press delivery mechanism. J. Bengough Printing-press plate-holder (2 pats.) K. M. and F. Schlueter, Jr. Printing-press, Proof. R. O. Vandercook Projectile. E. Gathmann Propelling device. C. Krohn Protector. E. P. and C. C. Maben Pruning-hook. E. W. Hill et al. Prunp. F. O. Kangas Pump, Multiple. S. L. Fulford Pump-plunger. H. Mead
Pruning-hook. E. W. Hill et al. Prunp. F. O. Kangas
Pump-plungerH. Mead Pump- SurfG. W. T. Snare
Punching and counting mechanism. Com- binedJ. Powers
Pump, Multiple. S. L. Fulford Pump-plunger H. Mead Pump, Surf- G. W. T. Snare Punching and counting mechanism. Com- bined. J. Powers Rail and tie elamp. D. L. Rice Rail-fastening. W. S. Barrett et al. Rail-handling apparatus J. Reinehr Rail-joint C. J. Heaguey Rail-tie. E. F. Spross et al. Railway-rail W. L. Caven Railway-rail and nut lock. B. Estes Railway-rail joint M. O. Carter Railway road-bed and track construction. J. N. D. Brown
Rail-joint. C. J. Heaguey Rail-tie. E. F. Spross et al. Railway-rail. W. L. Caren
Railway-rail and nut lock B. Estes Railway-rail joint M. O. Carter
Railway road-ded and track construction J. N. D. Brown Railway signaling apparatus
Railway road-bed and track construction. J. N. D. Brown Railway signaling apparatus. W. P. Neubert et al. Railway-tie. Railway-tie. Railway-tie. Railway-tie, Metallie. Railway-tie, R. Walters Railway-tie. Railway-tie
Railway-tic, MetallicC. P. Hammond Ram, HydraulicG. W. Walters
Razor-honing deviceW. A. Hammond Reeeptacle-closureR. Gober Reel or winding-machineA. Skofsrud
Refrigerating deviceR. V. Heuser Refrigerator-compartmentE. Richardson

rescaurant service	Killnetni-la
teversing mechanismE. S. I	Bryant et al.
Roasting-furnaceΩ	C. E. Dewey
Rotary engine	P. Kiltz
Rotary motor	amation of
waste	W. H. Hyatt
ack-holder1	3. J. Parson
saddesash-centcusash-centc	.J. H. Witt
Sash, Window	J. H. Tyler
Saws, Hood for friction	A. Fergusson
Screw-secured article and prod	ucing same V. Briesen
ScytheM.	M. Bartlett
Self-cicaning comb Self-oiling engineA. R. Ch	appell et al.
Self-player instrnmentW. Sewer vent-box	B. Fleming T. P. Moore
Sewing-machine shiftable wor	k-plate
Shades, Machine for making v	vindow
Shaft-collarE. F. V	Vright et al.
Shaft-couplingJ	G. Hansler
Sharpening device	W. Crabill
Sheet feeding and folding meel bined cover and center-page	anism, Com- insert
Shint bolder	H. M. Barber
Shock-absorber	M. Tibbetts
Shock-loader, Automatic ShoeE. B.	A. Hillstrom Loewenbach
Shoe-dresser knife	P. J. O'Brien
ShuttleD.	H. Saunders
SignI	r. J. Harms L. Hammond
Sign-tlasher). D. Ziegler
Resilient wheel. Restaurant service	F. J. Tone
8kate. Combined roller and ice Skid-lifting deviceW	J. Oldfield . H. Kratsch
Slicer	J. Heeley
Snow-shoe strap	T. L. Smith
Soda-water-fountain dispensing	g device 3. W. Speyer
Sofa-davenport	C. Klopping
with	J. D. Wilson
Spark-plng Spinning machine. Rotary rive	.J. R. Coyle
Shuar Lannon	G. Kingsbury
Spring	. O. Larson
Spring-wheel Square and bevel. Combined	G. Lecper A. Lindstrom
Staking-toolF	. B. Kendick
Station-indicators or the lik	e, Actuating
mechanism forO, E, . Steam-boilerA.	Worthington
Spring	W. K. Anstin
steam-engine, Multi-cyffidei C	. A. Huggins
Steam-generating plantA. E. Steam-trapB	Dobbs et al. . F. Silliman
Steam-trap	L. M. Cooper
Steam-trap	J. A. Gallup
Steel rings, Manufacture of .L. Steel trap	J. A. Gallup
Stoker, AutomaticV	V. J. Kenney
Stokers, Confidence for meet	шински
	H. E. Parson
Stove	H. E. Parson H. E. Parson . V. Rollings
Stove, Gas	H. E. Parson H. E. Parson . V. Rollings J. G. Harvey J. W. Young
Stove, Gas	H. E. Parson V. Rollings J. G. Harvey J. W. Young
Stokers, Coal-feeder for meet Stove, Gas- Stove, Gas- Stove, Oil- Stove, Vapor- Straining device	H. E. Parson V. Rollings J. G. Harvey J. W. Young G. Barthel C. J. Schmidt
Straining device	H. E. Parson V. Rollings J. G. Harvey J. W. Young G. Barthel C. J. Schmidt
Straining device	H. E. Parson V. Rollings J. G. Harvey J. W. Young G. Barthel C. J. Schmidt
Straining device	H. E. Parson V. Rollings J. G. Harvey J. W. Young G. Barthel C. J. Schmidt
Street and station indicators, wice for Pstump-pnller Surfacing-machine Switch and cut-out device, Elec Switch-controller H. D Switch-operating apparatus.	H. E. Parson V. Rollings J. G. Harvey J. W. Young J. G. Barthel C. J. Schmidt Operating de- T. Spindler H. Gordon F. R. Allen etric, R. Birnn Waterhouse J. Saurug
Street and station indicators, wice for Pstump-pnller Surfacing-machine Switch and cut-out device, Elec Switch-controller H. D Switch-operating apparatus.	H. E. Parson V. Rollings J. G. Harvey J. W. Young J. G. Barthel C. J. Schmidt Operating de- T. Spindler H. Gordon F. R. Allen etric, R. Birnn Waterhouse J. Saurug
Street and station indicators, wice for Pstump-pnller Surfacing-machine Switch and cut-out device, Elec Switch-controller H. D Switch-operating apparatus.	H. E. Parson V. Rollings J. G. Harvey J. W. Young J. G. Barthel C. J. Schmidt Operating de- T. Spindler H. Gordon F. R. Allen etric, R. Birnn Waterhouse J. Saurug
Street and station indicators, wice for Pstump-pnller Surfacing-machine Switch and cut-out device, Elec Switch-controller H. D Switch-operating apparatus.	H. E. Parson V. Rollings J. G. Harvey J. W. Young J. G. Barthel C. J. Schmidt Operating de- T. Spindler H. Gordon F. R. Allen etric, R. Birnn Waterhouse J. Saurug
Street and station indicators, wice for Pstump-pnller Surfacing-machine Switch and cut-out device, Elec Switch-controller H. D Switch-operating apparatus.	H. E. Parson V. Rollings J. G. Harvey J. W. Young J. G. Barthel C. J. Schmidt Operating de- T. Spindler H. Gordon F. R. Allen etric, R. Birnn Waterhouse J. Saurug
Street and station indicators, wice for Pstump-pnller Surfacing-machine Switch and cut-out device, Elec Switch-controller H. D Switch-operating apparatus.	H. E. Parson V. Rollings J. G. Harvey J. W. Young J. G. Barthel C. J. Schmidt Operating de- T. Spindler H. Gordon F. R. Allen etric, R. Birnn Waterhouse J. Saurug
Straining device vice for	H. E. Parson V. Rollings J. G. Harvey J. W. Young J. G. Barthel C. J. Schmidt Operating de- T. Spindler H. Gordon F. R. Allen tric.R. Birnn Waterhouse J. Saurug Layne et al. L. Myers R. S. Henry W. Brough H. P. Clausen H. Paul A. Barnhart M. J. Briggs W. Johnston E. L. Yale W. Wois
Straining device vice for	H. E. Parson V. Rollings J. G. Harvey J. W. Young J. G. Barthel C. J. Schmidt Operating de- T. Spindler H. Gordon F. R. Allen tric.R. Birnn Waterhouse J. Saurug Layne et al. L. Myers R. S. Henry W. Brough H. P. Clausen H. Paul A. Barnhart M. J. Briggs W. Johnston E. L. Yale W. Wois
Straining device vice for	H. E. Parson V. Rollings J. G. Harvey J. W. Young J. G. Barthel C. J. Schmidt Operating de- T. Spindler H. Gordon F. R. Allen tric.R. Birnn Waterhouse J. Saurug Layne et al. L. Myers R. S. Henry W. Brough H. P. Clausen H. Paul A. Barnhart M. J. Briggs W. Johnston E. L. Yale W. Wois
Straining device vice for	H. E. Parson V. Rollings J. G. Harvey J. W. Young J. G. Barthel C. J. Schmidt Operating de- T. Spindler H. Gordon F. R. Allen tric.R. Birnn Waterhouse J. Saurug Layne et al. L. Myers R. S. Henry W. Brough H. P. Clausen H. Paul A. Barnhart M. J. Briggs W. Johnston E. L. Yale W. Wois
Straining device vice for	H. E. Parson V. Rollings J. G. Harvey J. W. Young J. G. Barthel C. J. Schmidt Operating de- T. Spindler H. Gordon F. R. Allen tric.R. Birnn Waterhouse J. Saurug Layne et al. L. Myers R. S. Henry W. Brough H. P. Clausen H. Paul A. Barnhart M. J. Briggs W. Johnston E. L. Yale W. Wois
Straining device vice for	H. E. Parson V. Rollings J. G. Harvey J. W. Young J. G. Barthel C. J. Schmidt Operating de- T. Spindler H. Gordon F. R. Allen tric.R. Birnn Waterhouse J. Saurug Layne et al. L. Myers R. S. Henry W. Brough H. P. Clausen H. Paul A. Barnhart M. J. Briggs W. Johnston E. L. Yale W. Wois
Straining device vice for	H. E. Parson V. Rollings J. G. Harvey J. W. Young J. G. Barthel C. J. Schmidt Operating de- T. Spindler H. Gordon F. R. Allen tric.R. Birnn Waterhouse J. Saurug Layne et al. L. Myers R. S. Henry W. Brough H. P. Clausen H. Paul A. Barnhart M. J. Briggs W. Johnston E. L. Yale W. Wois
Straining device vice for	H. E. Parson V. Rollings J. G. Harvey J. W. Young J. G. Barthel C. J. Schmidt Operating de- T. Spindler H. Gordon F. R. Allen tric.R. Birnn Waterhouse J. Saurug Layne et al. L. Myers R. S. Henry W. Brough H. P. Clausen H. Paul A. Barnhart M. J. Briggs W. Johnston E. L. Yale W. Wois
Straining device vice for	H. E. Parson V. Rollings J. G. Harvey J. W. Young J. G. Barthel C. J. Schmidt Operating de- T. Spindler H. Gordon F. R. Allen tric.R. Birnn Waterhouse J. Saurug Layne et al. L. Myers R. S. Henry W. Brough H. P. Clausen H. Paul A. Barnhart M. J. Briggs W. Johnston E. L. Yale W. Wois
Straining device vice for	H. E. Parson V. Rollings J. G. Harvey J. W. Young J. G. Barthel C. J. Schmidt Operating de- T. Spindler H. Gordon F. R. Allen tric.R. Birnn Waterhouse J. Saurug Layne et al. L. Myers R. S. Henry W. Brough H. P. Clausen H. Paul A. Barnhart M. J. Briggs W. Johnston E. L. Yale W. Wois
Straining device vice for	H. E. Parson V. Rollings J. G. Harvey J. W. Young J. G. Barthel C. J. Schmidt Operating de- T. Spindler H. Gordon F. R. Allen tric.R. Birnn Waterhouse J. Saurug Layne et al. L. Myers R. S. Henry W. Brough H. P. Clausen H. Paul A. Barnhart M. J. Briggs W. Johnston E. L. Yale W. Wois
Street and station indicators, vice for	H. E. Parson V. Rollings J. G. Harvey J. W. Young G. Barthel C. J. Schmidt Departing de- T. Spindler H. Gordon F. R. Allen etric R. Birnn Waterhouse Layne et al. L. Myers R. S. Henry W. Brough H. P. Clausen H. Paul A. Barnhart M. J. Briggs W. Johnston E. L. Yale W. Weis Sne) W. Weis H. W. Weis Sne) W. Weis H. W. Hargis machine Diuner et al. cting and in- B. Updegraff P. Schiller P. Ernenwein H. B. Gale M. G. Darms Dombined C. Testman ombined T. Butler J. W. Cable C. H. Koble
Street and station indicators, vice for	H. E. Parson V. Rollings J. G. Harvey J. W. Young G. Barthel C. J. Schmidt Departing de- T. Spindler H. Gordon F. R. Allen etric R. Birnn Waterhouse Layne et al. L. Myers R. S. Henry W. Brough H. P. Clausen H. Paul A. Barnhart M. J. Briggs W. Johnston E. L. Yale W. Weis Sne) W. Weis H. W. Weis Sne) W. Weis H. W. Hargis machine Diuner et al. cting and in- B. Updegraff P. Schiller P. Ernenwein H. B. Gale M. G. Darms Dombined C. Testman ombined T. Butler J. W. Cable C. H. Koble
Straining device vice for	H. E. Parson V. Rollings J. G. Harvey J. W. Young J. G. Barthel C. J. Schmidt Operating de- T. Spindler H. Gordon F. R. Allen trie R. Birnn Waterhouse J. Saurug Layne et al. L. Myers R. S. Henry W. Brough H. P. Clausen H. Paul A. Barnhart M. J. Briggs W. Johnston E. L. Yale W. Weis SSNE) W. Weis SSNE) W. Weis SSNE) W. Weis SSNE) W. Hargis machine J. Clausen H. B. Chausen H. B. Chausen H. B. Gale J. F. Schiller P. Ernenwein H. B. Gale M. G. Darms J. W. Cable J. W. Cable C. H. Kohn C. A. Kenney J. W. Cable
Street and station indicators, vice for	H. E. Parson V. Rollings J. G. Harvey J. W. Young J. G. Barthel C. J. Schmidt Departing de- T. Spindler H. Gordon F. R. Allen tric R. Birnn Waterhouse J. Saurug Layne et al. L. Myers R. S. Henry W. Brough H. P. Clausen H. Paul A. Barnhart M. J. Briggs W. Johnston E. L. Yale W. Weis Ssne) W. Weis H. W. Hargis machine et al. cting and in- B. Updegraff P. Schmand J. F. Schiller P. Ernenwein H. B. Gale M. G. Darms O. Bernz H. Brousseau C. Testman ombined J. W. Cable C. A. Kenney J. W. Cable C. A. Kenney L. Watrous L. De Planque nism. M. Kern J. A. Deady
Street and station indicators, vice for	H. E. Parson V. Rollings J. G. Harvey J. G. Harvey J. W. Young G. Barthel C. J. Schmidt Operating de- T. Spindler H. Gordon F. R. Allen tric R. Birnn Waterhouse Layne et al. L. Myers R. S. Henry W. Brough H. P. Clausen M. J. Briggs W. Johnston E. L. Yale W. Weis Ssne) W. Weis Ssne) W. Weis H. W. Hargis machine M. J. Schmand T. Schiller P. Ernenwein H. B. Gale M. G. Darms M. G. Darms M. G. Darms M. G. A. Kenney C. A. Kenney C. L. Watrous J. W. Cable C. H. Kohn C. A. Kenney C. L. Watrous J. De Planque nism. M. Kern J. A. Deady J. R. Gilman
Street and station indicators, vice for	H. E. Parson V. Rollings J. G. Harvey J. W. Young G. Barthel C. J. Schmidt Departing de- T. Spindler H. Gordon F. R. Allen C. J. Saurug Layne et al. L. Myers R. S. Henry W. Brough H. P. Clausen H. Paul A. Barnhart M. J. Briggs W. Johnston E. L. Yale L. W. Weis SSNO, W. Weis H. W. Hargis machine Diumer et al. cting and in- B. Updegraff P. F. Schiller P. Ernenwein H. B. Gale M. G. Darms De M. G. Darms C. Testman De M. G. Darms C. H. Kohn C. A. Kenney L. Watrous L. De Planque De Isman L. De Allen L. A. Deady J. R. Gilman L. R. Rilman L
Street and station indicators, vice for	H. E. Parson V. Rollings J. G. Harvey J. W. Young J. G. Barthel C. J. Schmidt Departing de- T. Spindler H. Gordon F. R. Allen tric R. Birnn Waterhouse Layne et al. L. Myers R. S. Henry W. Brough H. P. Clausen H. Paul A. Barnhart M. J. Briggs W. Johnston E. L. Yale W. Weis Ssne) W. Weis H. W. Hargis machine Olumer et al. cting and in- B. Updegraff P. Schmand F. Schiller P. Ernenwein H. B. Gale M. G. Darms C. Testman ombined C. Testman ombined C. H. Kohn C. A. Kenney L. W. Watrous D. De Planque M. G. Darms C. A. Kenney L. L. Watrous De Planque L. De Planque L. De Planque L. De Planque L. G. Gilman E. R. Brinker G. W. Smith
Street and station indicators, vice for	H. E. Parson V. Rollings J. G. Harvey J. W. Young G. Barthel C. J. Schmidt Departing de- T. Spindler H. Gordon F. R. Allen tric R. Birnn Waterhouse Layne et al. L. Myers R. S. Henry W. Brough H. P. Clausen H. Paul A. Barnhart M. J. Briggs W. Johnston E. L. Yale W. Weis Ssne) W. Weis H. W. Hargis machine Gluner et al, cting and in- B. Updegraff P. Schmland F. Schiller P. Ernenwein H. B. Gale M. G. Darms O. Bernz H. Brousseau C. Testman ombined T. P. Schmand C. A. Kohl C. A. Kohl C. A. Kenney C. L. Watrous De Planque nism. M. Kern J. A. Deady J. R. Gilman E. R. Brinker G. W. Smith C. W. Stump C. W. Stump

Tubs, Shelf attachment for .J. M. Cahaney Tumbler case or holder E. C. Baldwin Turbine, Elastic-finid W. J. A. London Turbine, Fluid-actuated. W. J. A. London Turbine, Fluid-pressnreF. Hodgkinson Turbine, ReversibleA. E. Buck Turbine, Steam D. Kemble Turpentine and rosiu from resinous woods, Extracting H. T. Yaryan Type-writer cabinetK. M. Byron Type-writer keyboardL. A. Williams Type-writing and adding machines, Yielding depressor-plate for combined. W. L. Dench Type-writing machineO. L. Ingram Type-writing machineO. L. Ingram Type-writing machineJ. T. Schaaff Umbrella, FoldingS. Sibo UnderwaistB. L. Moore Vacuum cleaning apparatus. J. W. Leasure ValveG. D. Hoffman ValveR. E. Mofilit Valve, BalancedW. F. Gould Valve, Balanced slideW. F. Gould Valve, Balanced slideW. F. Gould Valve-floatL. A. Cornelins Valve for measured-liquid snpply, Ported plugD. D. R. and R. C. Grandy Valve-gear, TurbineC. E. Little Valve mechanismA. D. Catlin Valve heleleJ. M. Foy Vehicle-body, Combination convertible
Valve mechanism
Vaporizer and separator C. S. Wenger Vehicle J. M. Foy Vehicle-body, Combination convertible
Vehicle hanger-strap. F. R. Batchelder Vehicle, Motor- H. S. Baldwin Vehicle, Self-propelled. C. J. Hautler Vehicle shock-absorbing apparatus. C. H. Cox
Veil-fastener
Voltage controller, Multiple, E. W. Stull et al. Wagon-stake
Winding-machineS. Kendrick
Window-screen. C. E. Stanton Wire gate. C. Robinson Woodworking-tool. J. Tucholski et al. Wrench. W. Benson Wrench. H. W. Longfellow Wrench. C. W. Rose
Issued May 23, 1911.

MECHANICAL PATENTS.

Acid, Kessler apparatus for concentrating sulfuricJ. Teisset et al. Advertising-counterH. O., L. M., and W. H. Fritts
Advertising-counter
Advertising device
AerodromeR. E. Heath AeroplaneW. F. Smith
Air-brake coupling, Antomatic.J. McDonnell Air-brake-hose safety device
Air, Desiccating
Air-met device, Fresh- J. Chalke Airship T. Rhoades
Airship
Among Producing C Poseb at al
Amusement apparatusG. C. Tilyou
Animal-trap
Animal-trap
Automatically-releasing hookS. Ashdown Axle. CarE. Hawks
Bag-filling machineF. Muckley Bail-retainerA. R. Pritchard
Balloon structureJ. Schutte Bearing, Annular rollerS. S. Eveland
Beet-pullerJ. E. Hand Beet-pullerS. R. Giddings
Bell-ringer, Automatic A. W. Qnick Belt-controlling means M. Rockstroh
Board and cutter, Combined G. M. Crocker
sanken
ing and refilling locomotive E. B. White Bolt mechanism. Door-
Book, Cash-salesE. K. Bottle Book, Manifolding salesE. K. Bottle
Book-mark and paper-clip, Combined J. B. Shiver
Bottle-mold
Aerodrome. W. F. Smith Air-brake coupling, Antomatic J. McDonneil Air-brake-hose safety device. C. F. Strawmeyer Air, Desiccating H. T. Weston Air-inlet device, Fresh- J. Chalke Airship T. Rhoades Airship T. T. H. Konrad Airship R. P. Hall Alloy for high resistances, Nickel. W. B. Driver Ammonia, Prodncing C. Bosch et al. Amusement apparatus G. C. Tilyon Amusement device C. B. Trower, Jr. Animal-trap H. Copeland Animal-trap J. J. Osterrag Animal-trap W. G. Gates Armor-plate bolt G. Russo Automatically-releasing hook S. Ashdown Axle, Car- E. Hawks Bag-filling machine F. Muckley Bail-retainer A. R. Pritchard Balloon structure J. Schutte Bearing, Annular roller S. E. Eveland Beet-puller S. R. Giddings Bell-ringer, Automatic A. W. Qnick Belt-controlling means J. E. Hand Beet-puller S. R. Giddings Bell-ringer, Automatic A. W. Qnick Belt-controlling means M. Rockstroh Biscuit-machine J. H. Kellogg Board and cutter. Combined G. M. Crocker Boats, Means for indicating and raising snnken J. F. Shea Boilers, System of and apparatus for wash- ing and refilling locomotive E. B. White Book Cash-sales E. K. Bottle Book, Manifolding sales E. K. Bottle Book, Manifolding device for hot-water. Bottle-mold W. C. Allyn Box H. C. Walker
Bracelet (2 pats.)J. D. Kirby
Bottles, Edge-rolling device for hot-water. A. D. Lamont Box
Bread-cutterG. H. Lowell J. Karhu
Bread-cutter. J. Karhu Bridle-bit. L. Harvey Broom-handle holder. A. Bibauw Brush and operating means therefor, Bath I. Robinson
BathI. Robinson

Brush, Tooth	holan
Buckle. R. A. I. Buckle, Garment M. I.	Brown Rubin
Buckle. R. A. I Buckle, Garment M. Button-fastening machines, Anticloggin tachment for. G. W. P.	ng at- rkins
Calculating-machine D. E. Calculator L. B. The Camera W. F. F. Candy-setting machine G. B. N	omas olmer
Candy-setting machineG. B. N Caps in a holder, Machine for assemb	evers ling
Capsule-filler	Laval
Car. Dump- A. Can Car-fender H. S. B	ipbell eattie
Car grain-doorJ. I Car, MotorC. G. Mahana	fenry et al.
Car-ventilatorJ. Green Car-window shieldW. B. H	nburg anlon
Car, Dump. A. Can Car-fender. H. S. B. Car grain-door J. I. Car, Motor. C. G. Mahana Car-ventilator J. Greet Car-window shield. W. E. H. Cars. Cross-bearer for dump. Carbureter. C. D. Hershib Carbureter. A. J. Carbureter. A. J. Carbureter. A. J. Carbureter. A. J. Carriage running-gear, Child's R. W. Carrier. R. H. B. Carriers or containers, Supporting an taining device for article. A. H. Stev. Cash-register. E. J. von Casket. L. H. Mor Castings, Core for hollow. J. K. Dia Cennent-applier, Hand. W. F. Lautensch Centrifugal separator. G. E. Sanford Contrifugal switch. C. B. Han Chain carrier. T. C. Chain-link. H. E. Hay Choker-hook. L. S. De Chuck, Universal. G. O. Gr Churn. J. T. W. Clock-gong. M. Clock-gong. M. Clock-gong. T. Bennin Clothes-drier. G. M. S Clothes-line post. T. Bennin Clothes-rack. G. B. Do	strom
CarbureterC. D. Hershb CarbureterA. J.	erger Weiss
Carbureter, Anterior-throttled., E. P. Z Carriage running-gear, Child'sR. W.	Noves Hoey
Carrier	d re-
Cash-registerE. J. von	Pein
Casket. L. H. Mol Castings, Core for hollowJ. K. Din	mick
Centrifugal separator. G. E. Santensord	et al.
Chain carrier	Merz
Choker-hook. L. S. De	nison aidler
Churk, Universal G. G. G. G. Churk, J. T. W.	alters
Clock, Watch- T. F. G	lynor
Clothes mel	gfield
Clover-feeder J. A. V.	Vhite
Clutch H. J.	Wells
Clutch, park and roller	mann
Clothes-drier G. M. S. Clothes-line post T. Bennin Clothes-rack G. B. De Clover-feeder J. A. V. Clutch J. P. B. Clutch H. J. Clutch H. J. Clutch T. E. Busch Clutch Ball and roller T. E. Busch Clutch members, Leather-covering con E. W. Cock, Gage-glass C. F. Fe Coherer E. J. I. Collar, Horse J. D. A. Commutator-repairing means F. C. Fi	Sikes
Coherer E. J. I.	Burke
Commutator-repairing means.F. C. Fi Compressor, Engine-drivenG. L. B. Concentrator, CentrifugalL. E. Concrete manholes, Forming. C. S. Le Concrete pole, ReinforcedR.	scher
Concentrator, CentrifugalL. E.	Jones
Concrete pole, ReinforcedR.	Wolle
Condensing-engine J. St	nmpf
Controlling deviceH. W. Cl	ienev
Conveyer, Upright	tetter
Conveyers, Gravity-Toner for gravity	
Cooker J. C. Ba	hwab rtlett
Cooker J. C. Ba Cooker E. P. Seds Cooker . Electric J. D. La	hwab rtlett gwick mont
Concrete pole, Reinforced- R. Concrete reinforcement E Mc Condensing-engine J, St Connection-block W E M Controlling device H W Cl Convertible chair M M Conveyer, Unright H L Branss Conveyers, Gravity-roller for gravity- M C Se Cooker J C Ba Cooker E P Seds Cooker, Electric J D La Corking machine, Bottle- J E R Corking machine, Bottle- J E R Corset R Kindhauser, nee Ge	hwab rtlett gwick mont ovetti bhart
Cooker. J. C. Ba Cooker. E. P. Seds Cooker, Electric. J. D. La Corking machine, Bottle- J. E. Re Corset. R. Kindhauser, nee Ge Cotton-picker. C. E. Lea Cotton-picking machine. P. P. H	hwab rtlett gwick mont ovetti bhart phart aring
Cooker. J. C. Ba Cooker. E. P. Seds Cooker. J. D. La Corking machine. Bottle. J. E. Re Corset. R. Kindhauser, nee Ge Catton-picker. C. E. Lea Cotton-picking machine. P. P. H Counting moucy, tokens, &c., Device f B. Hoff	hwab rtlett gwick mont ovetti bhart phart aring or
Cooker J. C. Ba Cooker E. P. Seds Cooker, Electric J. D. La Corking machine, Bottle J. E. Re Corset R. Kindhauser, nee Ge Cotton-picker C. E. Lea Counting machine P. P. H Counting moucy, tokens, &c. Device f B. Hoff Coupling C. De S Cow-tail holder A. E. St	hwab rtlett rwick mont ovetti bhart phart aring or manu kalme caples
Cooker J. C. Ba Cooker E. P. Seds Cooker J. D. La Cooker, Electric J. D. La Corking machine, Bottle J. E. Re Corset R. Kindhauser, nee Ge Cotton-picking machine P. P. H. Counting moucy, tokens, &c., Device f counting moucy, tokens, &c., Device f Conpling C. De S Cow-tail holder A. E. St Crate R. J. M. Cultivator A. C. Line	hwab rtlett rwick mont ovetti bhart phart aring or mann kalme aples owen lgren
Cooker J. C. Ba Cooker, E. P. Seds Cooker, Electric J. D. La Corking machine, Bottle J. E. Re Corset R. Kindhauser, nee Ge Cotton-picking machine P. P. H Counting moucy, tokens, &c., Device f B. Hoff Conpling C. De S Cow-tail holder A. E. St Crate R. J. M Cultivator A. C. Line Curb and gutter, Metallic G. W. Hansbu	hwab rtlett gwick mont bhart phart aring or mann Salme aples owen lgren
Cooker. J. C. Ba Cooker. E. P. Seds Cooker. E. P. Seds Cooker. J. D. La Corking machine, Bottle. J. E. Re Corset. R. Kindhauser, nee Ge Cotton-picker. C. E. Lea Cotton-picking machine. P. P. H Counting moucy, tokens, &c., Device f B. Hoff Conpling. C. De S Cow-tail holder. A. E. St Crate. R. J. M Cultivator. A. C. Line Curb and gutter, Metallic. G. W. Hansbu Cospidor, Sanitary D. St Cutting-machine. G. M. KI	hwab rtlett rteick mont ovetti bhart phart aring or mann salme aples owen lgren couch eyr enfer
Cooker J. C. Ba Cooker, E. P. Seds Cooker, Electric J. D. La Corking machine, Bottle J. E. Re Corset R. Kindhauser, nee Ge Cotton-picking machine P. P. H Counting moucy, tokens, &c. Device f Coupling C. De S Cow-tail holder A. E. St Crate R. J. M Cultivator A. C. Line Curb and gutter, Metallic G. W. Hansh Custing-machine G. M. Kl Cutting-machine G. M. Kl Cutting-machine G. M. Kl Dental tool-holder C. R. De Dextrin, Manufacturing H. W	hwab rtlett rwick mont ovetti bhart phart aring or mann Salme aples owen lgren cough . Cyr enfer plkan
Cooker E P Seds Cooker, Electric J D La Cooker, Electric J D La Corking machine, Bottle J E Re Corset R Kindhauser, nee Ge Cotton-picker C E Lea Cotton-picking machine P P H Counting moucy, tokens, &c. Device f B Hoff Conpling C De S Cow-tail holder A E St Crate R J M Cultivator A C Linc Curb and gutter, Metallic Curb and gutter, Metallic Cursoider, Sanitary D St Cutting-machine G M Kl Dental tool-holder C R De Dextrin Mannfacturing H W Display device J E McCabe	hwab rtlett zwick mont ovetti bhart phart aring or mann salme aples owen lgren couch couch other owers
Cooker. J. C. Ba Cooker, E. P. Seds Cooker, Electric. J. D. La Corking machine, Bottle. J. E. Re Corset. R. Kindhauser, nee Ge Cotton-picking machine. P. P. H Counting moucy, tokens, &c. Device f Coupling. C. De S Cow-tail holder. A. E. St Crate. R. J. M Cultivator. A. C. Line Curb and gutter, Metallic. G. W. Hansh Cuspider, Sanitary. D. St Cutting-machine. G. M. KI Dental tool-holder. C. R. De Dextrin, Manufacturing. H. W Die-stock attachment. J. M. M Display device. J. E. McCabe Display-rack. A. E. D Display-stand. W. G	hwab rtlett rwick mont bhart phart phart aring or mann Salme aples owen lgren cough . Cyr enfer plkan Monie et al.
Cooker E. P. Seds Cooker, Electric J. D. La Cooker, Electric J. D. La Corking machine, Bottle J. E. Re Corset R. Kindhauser, nee Ge Cotton-picker C. E. Lea Cotton-picking machine P. P. H Counting moucy, tokens, &c. Device f B. Hoff Conpling C. De S Cow-tail holder A. E. St Crate R. J. M Cultivator A. C. Line Curb and gutter, Metallic Curb and gutter, Metallic Curbing-machine G. M. KI Dental tool-holder C. R. Po Dextrin, Manufacturing H. W Display device J. E. McCabe Display-rack A. E. S Display-stand W. G Distributions C. R. P. Collidary C. Sandary Distributions C. R. P. S Distributions C.	hwab rtlett rtlett rwick mont ovetti bhart phart aring or mann salme aples owen lgren lgren couch Cyr evfer owers wilkan Monie et al. Miller ilbert mann
Cooker J. C. Ba Cooker, E. P. Seds Cooker, Electric J. D. La Corking machine, Bottle J. E. Re Corset R. Kindhauser, nee Ge Cotton-picking machine P. P. H. Counting moucy, tokens, &c. Device f Coupling C. Device f Coupling C. Device f Cow-tail holder A. E. St Crate R. J. M Cultivator A. C. Line Curb and gutter, Metallic G. W. Hansh Cuspider, Sanitary D. St Cutting-machine G. M. KI Dental tool-holder C. R. De Dextrin, Manufacturing H. W. Die-stock attachment J. M. M Diesplay device J. E. McCabe Display-rack A. E. St Display-stand W. G Distillation, Utilizing waste heat of. F. Sh Ditching-machine II. G. Fr Door-check A. Ste	hwab rtlett zwick mont ovetti bhart aring or mann Salme aples owen lgren Cyr evfer owlsh Jonie et al. Miller diller ilbert nman anc's efhan
Corset	bhart phart phart aring or mann salme aples owen lgren cough . Cyr eufer owers olkan Monie et al. Miller ilbert man anc's efhan rantz lance
Corset	bhart phart phart aring or mann salme aples owen lgren cough . Cyr eufer owers olkan Monie et al. Miller ilbert man anc's efhan rantz lance
Corset	bhart phart phart aring or mann salme aples owen lgren cough . Cyr eufer owers olkan Monie et al. Miller ilbert man anc's efhan rantz lance
CorsetR. Kindhauser, nee Ge Cotton-pickerC. E. Lea Cotton-picking machineP. P. H Counting moucy, tokens, &c., Device f B. Hoff CouplingC. De s Cow-tail holderA. E. St CrateR. J. M CultivatorA. C. Linc Curb and gutter, Metallic G. W. Hansb Cushider, SanitaryD. St. Cutting-machineG. M. KI Dental tool-holderC. R. Po Dextrin. MannfacturingH. W Display deviceJ. E. McCabe Display deviceJ. E. McCabe Display-rackA. E. S Display-standW. G Distillation, Utilizing waste heat of F. Sh Ditching-machineII. G. Fr Door-checkA. St Door-leckA. St Door-leckA. St Door-hanger trackP. F Door-operating deviceT. P. Lal Doorb-handing machine R. J. F. and A. E. A Dowel-cutting machineM. Brochu Drying and conveying moist materials	bhart phart phart phart aring or mann Salme aples owen lgren cough . Cyr evfer owers olkan Monie et al. Miller ilbert man rantz lance Iayer layer layer et al
CorsetR. Kindhauser, nee Ge Cotton-pickerC. E. Lea Cotton-picking machineP. P. H Counting moucy, tokens, &c., Device f B. Hoff CouplingC. De s Cow-tail holderA. E. St CrateR. J. M CultivatorA. C. Linc Curb and gutter, Metallic G. W. Hansb Cushider, SanitaryD. St. Cutting-machineG. M. KI Dental tool-holderC. R. Po Dextrin. MannfacturingH. W Display deviceJ. E. McCabe Display deviceJ. E. McCabe Display-rackA. E. S Display-standW. G Distillation, Utilizing waste heat of F. Sh Ditching-machineII. G. Fr Door-checkA. St Door-leckA. St Door-leckA. St Door-hanger trackP. F Door-operating deviceT. P. Lal Doorb-handing machine R. J. F. and A. E. A Dowel-cutting machineM. Brochu Drying and conveying moist materials	bhart phart phart phart aring or mann Salme aples owen lgren cough . Cyr evfer owers olkan Monie et al. Miller ilbert man rantz lance Iayer layer layer et al
CorsetR. Kindhauser, nee Ge Cotton-pickerC. E. Lea Cotton-picking machineP. P. H Counting moucy, tokens, &c., Device f B. Hoff CouplingC. De s Cow-tail holderA. E. St CrateR. J. M CultivatorA. C. Linc Curb and gutter, Metallic G. W. Hansb Cushider, SanitaryD. St. Cutting-machineG. M. KI Dental tool-holderC. R. Po Dextrin. MannfacturingH. W Display deviceJ. E. McCabe Display deviceJ. E. McCabe Display-rackA. E. S Display-standW. G Distillation, Utilizing waste heat of F. Sh Ditching-machineII. G. Fr Door-checkA. St Door-leckA. St Door-leckA. St Door-hanger trackP. F Door-operating deviceT. P. Lal Doorb-handing machine R. J. F. and A. E. A Dowel-cutting machineM. Brochu Drying and conveying moist materials	bhart phart phart phart aring or mann Salme aples owen lgren cough . Cyr evfer owers olkan Monie et al. Miller ilbert man rantz lance Iayer layer layer et al
CorsetR. Kindhauser, nee Ge Cotton-pickerC. E. Lea Cotton-picking machineP. P. H Counting moucy, tokens, &c., Device f B. Hoff CouplingC. De s Cow-tail holderA. E. St CrateR. J. M CultivatorA. C. Linc Curb and gutter, Metallic G. W. Hansb Cushider, SanitaryD. St. Cutting-machineG. M. KI Dental tool-holderC. R. Po Dextrin. MannfacturingH. W Display deviceJ. E. McCabe Display deviceJ. E. McCabe Display-rackA. E. S Display-standW. G Distillation, Utilizing waste heat of F. Sh Ditching-machineII. G. Fr Door-checkA. St Door-leckA. St Door-leckA. St Door-hanger trackP. F Door-operating deviceT. P. Lal Doorb-handing machine R. J. F. and A. E. A Dowel-cutting machineM. Brochu Drying and conveying moist materials	bhart phart phart phart aring or mann Salme aples owen lgren cough . Cyr evfer owers olkan Monie et al. Miller ilbert man rantz lance Iayer layer layer et al
CorsetR. Kindhauser, nee Ge Cotton-pickerC. E. Lea Cotton-picking machineP. P. H Counting moucy, tokens, &c., Device f B. Hoff CouplingC. De s Cow-tail holderA. E. St CrateR. J. M CultivatorA. C. Linc Curb and gutter, Metallic G. W. Hansb Cushider, SanitaryD. St. Cutting-machineG. M. KI Dental tool-holderC. R. Po Dextrin. MannfacturingH. W Display deviceJ. E. McCabe Display deviceJ. E. McCabe Display-rackA. E. S Display-standW. G Distillation, Utilizing waste heat of F. Sh Ditching-machineII. G. Fr Door-checkA. St Door-leckA. St Door-leckA. St Door-hanger trackP. F Door-operating deviceT. P. Lal Doorb-handing machine R. J. F. and A. E. A Dowel-cutting machineM. Brochu Drying and conveying moist materials	bhart phart phart phart aring or mann Salme aples owen lgren cough . Cyr evfer owers olkan Monie et al. Miller ilbert man rantz lance Iayer layer layer et al
CorsetR. Kindhauser, nee Ge Cotton-pickerC. E. Lea Cotton-picking machineP. P. H Counting moucy, tokens, &c., Device f B. Hoff CouplingC. De s Cow-tail holderA. E. St CrateR. J. M CultivatorA. C. Linc Curb and gutter, Metallic G. W. Hansb Cushider, SanitaryD. St. Cutting-machineG. M. KI Dental tool-holderC. R. Po Dextrin. MannfacturingH. W Display deviceJ. E. McCabe Display deviceJ. E. McCabe Display-rackA. E. S Display-standW. G Distillation, Utilizing waste heat of F. Sh Ditching-machineII. G. Fr Door-checkA. St Door-leckA. St Door-leckA. St Door-hanger trackP. F Door-operating deviceT. P. Lal Doorb-handing machine R. J. F. and A. E. A Dowel-cutting machineM. Brochu Drying and conveying moist materials	bhart phart phart phart aring or mann Salme aples owen lgren cough . Cyr evfer owers olkan Monie et al. Miller ilbert man rantz lance Iayer layer layer et al
CorsetR. Kindhauser, nee Ge Cotton-picking machine	bhart phart phart phart phart aring or mann salme aples owen lgren couch Cyr ever vlkan Monie et al. Miller ilbert hman rants lance Iayer ldred et al Var Mosev Kidd nkler sys- liams liams inger t al. bach ot al.
CorsetR. Kindhauser, nee Ge Cotton-picking machine	bhart phart phart phart phart aring or mann salme aples owen lgren couch Cyr ever vlkan Monie et al. Miller ilbert hman rants lance Iayer ldred et al Var Mosev Kidd nkler sys- liams liams inger t al. bach ot al.
CorsetR. Kindhauser, nee Ge Cotton-picking machine	bhart phart phart phart phart aring or mann salme aples owen lgren couch Cyr ever vlkan Monie et al. Miller ilbert hman rants lance Iayer ldred et al Var Mosev Kidd nkler sys- liams liams inger t al. bach ot al.
CorsetR. Kindhauser, nee Ge Cotton-picking machine	bhart phart phart phart phart phart aring or mann salme salme aples owen lgren cough Cyr ewers plkan Monie et al. Miller lance Hance Hance Hance Lare Carr Moseu Kidd nkler et al. bach bach bach back Liams Kwis Liams Kwis Liams Liam
CorsetR. Kindhauser, nee Ge Cotton-picking machine	bhart phart phart phart phart phart aring or mann salme salme aples owen lgren cough Cyr ewers plkan Monie et al. Miller lance Hance Hance Hance Lare Carr Moseu Kidd nkler et al. bach bach bach back Liams Kwis Liams Kwis Liams Liam
CorsetR. Kindhauser, nee Ge Cotton-picking machine	bhart phart phart phart phart phart aring or mann salme salme aples owen lgren cough Cyr ewers plkan Monie et al. Miller lance Hance Hance Hance Lare Carr Moseu Kidd nkler et al. bach bach bach back Liams Kwis Liams Kwis Liams Liam
CorsetR. Kindhauser, nee Ge Cotton-picking machine	bhart phart phart phart phart phart aring or mann salme salme aples owen lgren cough Cyr ewers plkan Monie et al. Miller lance Hance Hance Hance Lare Carr Moseu Kidd nkler et al. bach bach bach back Liams Kwis Liams Kwis Liams Liam
CorsetR. Kindhauser, nee Ge Cotton-picking machine	bhart phart gor mann salples owen lgren cough Cyr enfer pland fonie et al. diller ilbert connance flance sys- light bach cot al. cought cought flance
CorsetR. Kindhauser, nee Ge Cotton-picking machine	bhart phart gor mann salples owen lgren cough Cyr enfer pland fonie et al. diller ilbert connance flance sys- light bach cot al. cought cought flance

Elevator-door mechanismJ. L. Kail Elevator-shaft doorJ. Rashkin
End-gateG. Lindquist Engine cranking device, GasC. R. Engel Engine-starter, AutomaticC. J. Coleman
Engines, Automatic mixer and charger for gas
ternal-combustion
plosive- R. McKee Ensilage-cover I. Speck Explosive C. Waster
Feed-bag. C. H. Avey Feed-cutter self-feeder. A. Greve
r eed-regulatorR. H. Williams Fifth-wheel, VehicleS. Craig Filling-machineF. J. Englen
Filter-controllerF. B. Leopold Finger-gnide for stringed instruments
Fire-escape, PortableJ. C. Pouliot Fire-extinguisher, Antomatic.A. E. Johnson
rirearm. F. Unger et al. Firearm, Antomatic L. H. Cobb Firearm with stationary barrel, Automatic.
Fireproof door. M. Knotgen Fish-dom T. P. Shean
Flange, Adjustable P. Mucler Flying-machine F. W. Jatunn
Formates, Monufacture ofA. Wiens Fragile articles, Container for
Frame for snpporting coated articles G Russell
Fulling-machines, Throw-out device for J. Hemmer
Furnace apparatus, Blast
Elevator-shaft door
steam-boiler
Garage turn-table W. T. Simpson Gas and liquid mixer E. P. Noyes Cas. Apparatus for proventing synlesions
and danger from the escape of
Gas burner, FuelC. A. Knrtz, Jr., et al. Gas-burner, Safety
controllingF. Rossbach-Rousset Gas-engineJ. A. Burnham, Jr. Gas. Enriching illuminating II I. Doberty
Gas generator, AcetyleneE. Dietze, Jr. Gas generator, AcetyleneH. Knapp
Gas-producerR. V. Farnhain Gas-producer systemG. Akerlund Gas producing and consuming apparatus
GateB. Harmon
Gear Transmission- C M Leoch
Gear, Transmission
Gas regulator and cnt-off, Combined J. J. Heitz Gate
Gear, Transmission
Harrow-tooth clip

Knit or woven fabric or felted boot....

Knob, Screwless. W. K. Henry Ladder, Extension. R. B. Shaw Lamp. A. K. Miller Lamp-bracket. W. H. Cross Lamp-globe holder. T. J. Litle. Jr. Lamp regulator, Electric. E. Johnson Lamp-support and automatic timing mechanism. G. H. Rnpley Lantern, Pilot signal. A. W. Johnson Lantern, Tubular. A. R. Pritchard Lantern, Eail-bearing for A. R. Pritchard Latch for silos, Door. K. J. Bell Lathe. F. H. Beroid Laundry apparatns. J. L. Atwater Layer-loop. J. P. Heiser Leather waterproofing and preserving composition. Software the second control of the silos. Software the second composition. Knit or woven fabric or felted boot..... Linotype-machine. J. H. Seneff et al.
Linotype-machine. J. H. Petersen
Liquid mixing and containing apparatus.
F. Pridy
Liquid-separator, Centrifugal. F. Pridy
Liquid-separator, Centrifugal. F. Pridy
Lock. E. C. Little
Loom filling-exhaustion-indicating mechanism. A. E. Rhondes
Looms, Filling-carrier for automatic feeler.
A. E. Rhoades
Machine-tools, Turret-head for.
A. J. Brown
Manure-fork and lifting-derrick.
Magnet structure, Field. A. J. Brown
Manure-fork and lifting-derrick.
A. J. Brown
Manure-fork and lifting-derrick.
Match-hox. L. Zachara
Match-box. L. J. Allison
Mach-splint-straightening machine. M. Sun
Measuring and indicating sizes of tiles, &c.,
Automatic apparatus for W. B. Updegraff
Measuring active for spectacles and eyeglasses. J. J. Jaffe
Measuring plastic material, Scoop for.
L. O. Wells
Measuring the velocity of flowing streams,
Device for J. A. Cole
Memorandum pads and crlendars, Stand
for. W. M. Chamberlin, Jr.
Metal bar or structural section, Solid-rolled
cross-sectionally-H-shaped. H. Grey
Metal blanks, Apparatus for machining ends
of. E. Einfeldt
Metal-forming machine. A. J. Lewis
Metal-shearing machine. A. J. Lewis
M

	_
Potato-digging-machine attachmeutE. L. Botts et al.	
Potato-digging-machine attachmeutE. L. Botts et al. Powder compound, NurseryJ. W. Brodbeck et al. Power-generating system. J. M. W. Kitchen Power-shovelW. M. Hale Preserve jar and bottleA. H. Walcott Printing prossy delivery mechanism	
Preserve jar and bottleA. H. Walcott Printing-press delivery mechanism R. A. Freeman	•
Printing-press delivery mechanism	
Propelling means L. Rosen Pulley W. L. Pipkiu Pulverulent material, Device for feeding	
Pump, Breast	
Pump, Oil	
to printing-forms A. G. Steveuson Propeller M. D. Thompson Propelling means L. Rosen Pulley W. L. Pipkiu Pulverulent material, Device for feeding. T. A. Edison Pump, Breast C. A. Tatum Pump, Membrane F. W. Winterhoff Pump, Oil H. C. Clay Quilf, Footboard P. D. Stannard Radiator J. M. Fedders Radiator F. Todd Rail-giant F. S. Roberts Rail-joint F. S. Roberts Rail-joint C. Detwiler Rail-joint R. T. Gnnn Rail-joint J. Cusick	
Rail-joint R. T. Gnnn Rail-joint J. Cusick Pail-tie T. F. May	
Railway, Elevated cable	
Rail-joint J. Cusick Rail-jie J. Cusick Rail-fie T. F. May Railway, Elevated cable- C. Lewellen Railway splico-bar J. P. Currin Railway-switch, Automatic S. R. More Railway-tie Automatic J. L. Kimball Railway-tie and fastening J. L. Kimball Railway-tie rail-fastening, Metallic J. Bryforle	
A. Bryfogle Raisins in the process of seeding, Method and apparatus for treating	
N. B. Converse Razor, Safety- A. A. Waruer Receptacle, W. T. McDowell	
Receptacle, DisappearingJ. Germin Refrigerator-car-door packing, Racking-strip forW. H. Miner	
Refrigerators, Ice-protector for	
Ringing system, Party-lineC. S. Winston Robe-rack, SafetyD. I. Burton	
Rock-shaft, Counceting a relatively thin	
Rotary eugineT. J. and D. M. Winans Safe and vanit doorE. S. Pillard Safe-lock W. A. Hood	
Safety device, Automatic. I. C. Dakiu Sand-band. G. A. Nelson Sash-lock J. B. Johusou	
Sash-lock. II. Kaslopsky Saw, Metal- G. H. Burke Saws, Feed apparatus for jointing	
Sawmill W. L. Blay Scale J. S. Allen	
Scale, Pitless. S. J. Ausim Scale, Weighing- W. S. Smith Scale, Weighing- E. E. Weck	
Screw. Ball-bearingW. S. Nichols et al. Screw-machines, &c., Feeding device for	
Raisins in the process of seeding, Method and apparatus for treating. N. B. Converse Razor. Safety- A. A. Waruer Receptacle. W. T. McDowell Receptacle. Disappearing. J. Germin Refrigerator-car-door packing, Flacking-strip for W. H. Miner Refrigerators, Ice-protector for W. H. Miner Refrigerators, Ice-protector for J. F. Earnshaw Rheostat. Liquid II. W. Cheney Ringing system, Party-line. C. S. Winston Robe-rack, Safety D. I. Burton Rock-drills, Valve-motion for (2 pats.) L. C. Bayles Rock-shaft, Counceting a relatively thin arm fo a G. J. Griffiths Rotary eugine. T. J. and D. M. Winans Safe and vanit door. E. S. Pillard Safe-lock W. A. Hood Safety device. Automatic. I. C. Dakiu Sand-band. G. A. Nelson Sash-lock J. B. Johusou Sash-lock J. B. Johusou Sash-lock J. B. Johusou Sash-lock G. H. Kaslopsky Saw, Metal G. H. Burke Saws, Feed apparatus for jointiug	
Sewing-machine thread-looper W. Duffy	
Shade-roller bracketM. and G. J. Rhein Shaff-hanger supportJ. Kahn Sharpening machine, DiskF. H. Kleuke Sharpening machine, RazorP. E. Bird Shape book	
Sheet-delivery mechanismB. F. Upham Sheet-metal article, HollowJ. L. Fusner Shingle Metallic J. P. Todd	
Sharpening machine, Razor. P. E. Riffd Sheep-hook. J. A. Ross Sheet-delivery mechanism. B. F. Upham Sheet-metal article, Hollow. J. L. Fusner Shiugle, Metallie. J. P. Todd Shock-handling apparatus. N. W. Lyon Shovel, plow, and scraper, Combination. E. T. Harvey Shutter-slat fastener. A. Basnett Shutter-worker. M. W. Smith Signals electrically through conductors, Sys-	
Shutter-slat fastenerA. Basnett Shutter-workerM. W. Smith Signals electrically through conductors, Sys-	
signals electrically through conductors, System of transmitting. F. Fisher Sik. Treating S. E. Rains Skillet E. A. Hudson Skirt-marker S. T. Day Sled attachment for vehicles, C. F. Blodgett Smelting and refining apparatus, Electric J. H. Reid	
Skirt-marker. S. I. Day Sled attachment for vehicles. C. F. Blodgett Smelting and refining apparatus, Electric. I. H. Reid	
Smoke-consumer	
Spark-plugO. C. Winestock Spinning and roving machine spindle J. C. Leslie	
Spring and roying machine spinder. J. C. Leslie Spoon-holder, Sanitary. W. B. Rohmer Spring. C. Watson et al. Spring-end plate. T. A. Shea Spring-wheel. F. J. Millea Spring-wheel. J. F. Arnold Stacker and elevator, Straw. A. Roseuthal Stalk shyndler. H. W. Vail	
Spring-wheel F. J. Miller Spring-wheel J. F. Arnold Stacker and elevator, Straw. A. Roseuthal	
Stanging and other pressW. H. Hibbard Staple-set	
Stalk-shredder	
Steel ingots, Mold for forming cast J. M. Ward Stop deviceF. H. Richards	
Steam-generator. R. I. Henley et al. Steel ingots, Mold for forming cast	
Stove for blast-furnaces and the like K. L. Landgrebe Street-indicator	
Simula-buller and land-clearing machine	
Suction-producing device. J. II. Goehst et al. Suspension-hook. A. W. Martin Swiug, Lawu- W. S. Tothill	

			_
Switch-operating mechanism T and cock, Service T. Service T. Service T. Service Tantalus-stand	F. 3	IcGuire	
T and cock, Service T. Service Tantalus-stand	л. .Р. . D.	Mueller Heriot	
Tap. Wood	V. Ε Γ. Δ	dwards IcElroy Lour	
Temperature indicator or alarm M. L.	Hn	berman	
Terminal block, ServiceG. E. I Threading-die	'alm Ri J	er et al. chmond Pelican	
Thresher-rackJ. I Tinder-box. MechanicalQ. 6	erga	larrisou icsevics	
Tire, ArmoredG. D. M Tire-fillerF. Tire, LeatherR.	1001 T. J.	e et al. Roberts Elledge	
Tire. ResilieutJ. G. Tire-thread	A. J.	Kitchen Rusby	
Tool	. J.	Strealy Deffe	
Torpedo placer, RailwayE. Toy monorail system Track-sanding mechanism for	S.] H. I str	Lafferty Rehbach eet-cars	
and the like	W. Pe	Rogers nee. Jr.	
Trans-controlling system	J. 1 J. Đ	ouglass Coney	
Truck E Truck W Truck W Truck Car- C A	. N	I. West .S. Cyr McCov	
Truck, Car	Li	ndstrom Olivetti	
forI	I. S	. Dukes	
Type-writing machine Type-writing machine	H. H.	A. Seib C. Ford	
Umbrella, tent, or canopy. Fo	ldab . M	le cClellan	
Type-writing machine. Type-writing machine. Type-writing machine. Umbrella, Collapsible	usse (*)	ll et al.	
Valve, Automatic retainingG. Valve, Electrically-controlled	W. R. 3	Martin L. Jones	
ratusI. V Valve, GafeF	L. R	itchfield Banks	
ratusI. V Valve, GateF Valve, Steam-actuated, G. J. O. Valve, WaterJ. Varnished articles, Apparatus t	D. P. 1	Dikkers teinecke traing	
Vehicle C. C. Vehicle cushiouing device F.	Re A.	senberg Carman	
Vehicle cushioning deviceF. Vehicle driving-gear. MotorI	н. Е.	Barker L Lever	
Vehicle signal device	T. S Frie	Moore drichsen	
Vehicle-wheelJ. C. Vehicle-wheelA. W.	J.''. LA	IcAlpine ernathy	
Vehicle cushiouing device. F Vehicle driving-gear, Motor-, I Vehicle signal device. Vehicle-spring. W. Vehicle-wheel. G. Vehicle-wheel. J. G. Vehicle-wheel. A. W. Vehicle wheel and tire. Vending-machine H. Vending-machine coin-confrolled O	Л . О., чав	I. Clark Brown aratus	
Vantilating machanism I	. 3	Stowa	
Vessel, Electrically-heated Violin-bows, Device for hairin W. H	. јі	cKinney	
Vise	I, E	. Lewis L. Heath each	
Wagon-bodies, Double step for,	A. D.	Howell S. Lloyd	
Wagon-bodies, Double step for. Wagon hay-rack	R. I .R.	Pedersen Tinsley	
Wall for silos and the like.E.F. Wardrobe-free	Wie Ered E. I	derholdf erickson T. Trow	
Washtub-cover. Watchmaker's peg-wood sharpe	ner. Eis	senmann	
Water-check	і. Е ар	, Ohlson paratus,	
Waster cooler and filter. Sanita	г. s ry	chneider Stevens	
Water-heater. Water-heater Electric M H	3. C	onnolley C. Hart	
Watermoter E Water-motor E	. Е. М.	Gamon Shelley	
Water-boiler C. P. Water-boiler J. Water-cheek. Water clearing and filtering Waster Water cooler and filter. Sanita Water-ender J. Water-ender J. Water-ender J. Water-ender J. Water-heater J. Water-heater J. Water-heater J. Water-heater J. Water-motor E. Water-motor E. Water-motor J. Wave-motor J. Wave-power machine. Wax-molding machine. Sealing- Sealing-motor J. Weed-burning apparatus J. Weight-motor J. Wedding lapped sheet metal, El Wheel etterlyment Vehicle	. Б. . Е. .Е.	Quimby Brakey T. Allen	
Wax-molding machine, Sealing. G. D. C.	Co P	ddington	
Weighing machine, Automatic, Weight-motor. L. P.	L . No	. Jacobs rmandin	
Wheel attachment, Vehicle	ectr . W	ically Knapp	
Wheel-blank, Mefal	šeip . E.	er et al. E. Slick	
Wheel-scraping implement	2	Iansfield Johnson	
Whiffletroe-clip, SafetyG. Winding-machineR. Windmill	S. (C. (A.	MacLeod Sampbell Sterner	
Window-chair. Window-cleaner. J.	W.	Allinger Gibbons	
Wood, Impregnating. Wrapping-machine.	C. S E. I	S. Smith	
Wrench	. W. U	A. Seils '. Giffen . Carlyle	
Welding lapped sheet metal, El Wheel attachment, Vehicle G. Wheel-blank, Metal. Wheel-blank, Metal. Wheel-scraping implement. J. Wheel-scraping implement. J. Wheel-scraping device. J. Whiffletree-clip. Safety. G. Winding-machine. R. Window-chair. Window-cleaner. J. Window-cleaner. J. Window-screen. G. Wood, Impregnating. Wrapping-machine. Wrench. Wrench. J. Wrench. J. Wrench. J. Wrench. J. Wrench. J. Wrench. J. S. Zine oxid, Manufacture of	Ε.	Metcalf A. Blum	
Issued May 30,	- 19:	11.	

Issued May 30, 1911.

MECHANICAL PATENTS.

Sait le counting mechanism E McCnive	Adding elate and how Powertiel	_
Switch-operating mechanismF. McGuire T and cock, ServiceH. Mueller	Adding slate and key, Perpetual	Č
T. Service- P. Mueller Tantalus-stand G. D. Heriot	Advertising deviceJ. T. O'Connor Advertising deviceJ. Buckley	(
Tap. WoodD. W. Edwards	Aeroplane G. Simmous	Ç
Telegraphy, Wireless, J. F. McElroy Telephone pay-station, G. A. Long	AeroplaueV. P. Fleiss Air-coupling, AntomaticH. S. Miller	(
Temperature indicator or alarm	Air-compressor for use with engines	
Terminal block, Service. G. E. Palmer et al.	Airship	•
Threading-die	Alarm device, ElectricalA. J. Rice	(
Thresher-concaveJ. Pelican Thresher-rackJ. R. Harrisou	Alloy, MetallicA. Huber Ammonia from peat, Producing	(
Tinder-box, MechanicalO. Gergacsevics Tire, ArmoredG. D. Moore et al.	Ammunitiou, ArtilleryK. Voller	(
Tire-filler	Amusement apparatusE. Kohler	(
Tire, Leather. R. J. Elledge Tire, Resilieut. J. G. A. Kitchen	Arc rectifier, High-voltage mercury O. O. Kruh	(
Tire-thread	ArmatureJ. Coafes	(
Tires, Filling hollowW. H. Goodfellow ToolW. J. Strealy	Automatic switch	(
Tool-holderR. E. Deffe Torpedo placer, RailwayE. S. Lafferty	Antomatic switch	(
Toy monorail system	J. A. Schmidtmeier	,
Track-sanding mechanism for street-cars and the like	Automobile-jack (Reissue)J. C. Moore Automobile-lock,C. R. Parker et al.	(
Tractor, Farm	Antomobile power mechanism	-
Train-controlling systemW. O. Medford Trestle-clampF. P. Douglass	E. E. Sappington Automobile spring-wheelF. J. Maccarthy	- (
Trousers-hangerJ. D. Coney	Automobile transmission-gearing	(
Truck. E. M. West Truck. S. Cyr	Automobiles, Electromagnetic power-velocity-ratio device for driving.	(
Truck. W. J. McCoy Truck, Car- C. A. Lindstrom	ity-ratio device for driving	(
Type-writer	Automobile, Hydraulic transmission mech-	(
Type-writer desks, Work-holder attachment forII. S. Dukes	anism for	. (
Type-writing machine	BafflerO. Junggren	(
Type-writing machineG. A. Seib Type-writing machineH. C. Ford	Bag filling and weighing machine, AutomaticE. L. Buschman	(
Umbrella, Collapsible,, H. V. De Witt	Bag-holder. A. Davis Bait-holder. W. J. Kearney	(
Umbrella, tent, or canopy, Foldable S. McClellan	Baling-press division-blockC. E. Spronls	1
Vacuum-cleaner for carpets, &cJ. H. Russell et al.	Ballast-burning machine	1
ValveJ. S. Chambers	Balloon	
Valve, Automatic retainingG. W. Martin Valve, Electrically-controlledR. T. Jones	Barrette-tongue connectionF. E. Edgerly Basket, Butcher'sL. B. Kauffuann	•
Valve for pneumatic-despatch-tube appa-	Bath-tnb casingJ. II. Danver	(
ratusI. W. Litchfield Valve, GafeF. R. Banks	Baftery-well	,
Valve, Steam-actuated, G. J. O. D. Dikkers Valve, WaferJ. P. Reinecke	Bearing, Ball- (2 pats.)W. C. Swift Bearing eages, Mold for forming roller	
Varnished articles, Apparatus for drying		
Vehicle E. Rosenberg Vehicle C. A. Carman	Bearings, Equalizing device for ball F. W. Gnruey	
Vehicle-brakeE. H. Carroll	Bed, SofaR. Deimel	
Vehicle cushioning deviceP. E. Barker Vehicle driving-gear, MotorH. E. Lever	Bed, SofaA. C. Klopping Bee-smokerF. Banzenbaker	,
Vehicle signal deviceC. S. Moore Vehicle-springW. Friedrichsen	Beehive	
Vehicle-wheel	D. F. Magee	
Vehicle-wheelJ. G. McAlpine Vehicle-wheelA. W. Abernathy	Relt-clamp	
Vehicle wheel and tire	Billiard-counterF. C. Hobbs Bischit, Filamentons cereal. E. L. Wallace	
Vending-machine	Blasting-plugI. Swingle	
Ventilating mechanismB. A. Stowe	Boiler	
Vessel, Electrically-heated	Boiler-flue cleaner	
Violin-bows. Device for hairing	S. Elliott	
Vise	Boiler superheater, SteamH. H. Vaughan Boilers and the like, Manufacturing headers	
Wagon and surf-hoat, Combined beach	for water-tubeJ. Fielding	
Wagon-bodies, Double step for. D. S. Lloyd	Bolt and nut fasteningH. G. Gillmor Bone-forkA. P. Schneider	
Wagon hay-rackG. G. Ketchaiu	Book-holderE. F. Crane Book rest or tableJ. L. Young	
Wagon-loading deviceR. Pedersen Wall constructionR. Tinsley	Bottle-washing machine	
Wall for silos and the like. E. F. Wiederholdt	Roftles and like articles, Machine for cleaning (Reissne)	
Wardrobe-freeA. Frederickson Washtub-coverF. H. Trow	Box-making machineG. D. Parker	
Watchmaker's peg-wood sharpener	Brake mechanismE. A. Bole Brake-staffC. A. Lindstrom	
Water-boilerJ. T. Ketchum	Bridle-bifI. S. Martin BroilerE. I. Bryan	
Water-checkJ. E. Ohlson Water clearing and filtering apparatus,	Brush, DetachableJ. J. Pokorney	
Water clearing and filtering apparatus, WasteF. Schneider Water cooler and filter, Sanitary	Brush, ToothJ. J. Wifman BufferJ. C. Regan	
T. A. Stevens	Burglar and fire alarm system. J. M. Johnson	
Water-gage. C. Connolley Water-heater C. Hart	Bushing W. R. Anderson Cabinet, Secret L. Knaster	
Water-heater, ElectricM. H. Shoenberg	Cake-pan, AdjustableJ. F. Truman Calcimining compoundO. Bush	
WatermeterE. E. Gamon Water-motorE. M. Shelley	Calculating-machine anchor - escapements,	
Watering-trongh. W. D. Quimby Wave-motor. R. E. Brakey	Mechanism for disengaging. V. J. Odliner CalipersJ. Zherdeff	
Wave-power machineE. T. Allen	Can-openerF. Noel Canceling-machineC. A. Pfalzgraf	
Wax-molding machine, Sealing	Canuon. Automatic rapid-fireK. Voller	
Weed-burning apparatus	Caontchone-like substance from animal matter, Manufacture of an elastic	
Weight-motorL. P. Normandin	W. van der Heyden	
Welding lapped sheet metal, Electrically G. W. Knapp	Car-bolster chafing-plateT. H. Russum Car-brakeD. S. Stauffer	
Wheel attachment, Vehicle	Car-brake-leverage adjustment	
Wheel-blank, Metal E. E. Slick	Car-doorF. Cronemiller	
Wheel-guard	Car-door	
Wheel-securing deviceI. O. Johnson	Car door, GrainJ. A. Richley Car door-operating mechanism, Gondola	
Whiffletree-clip, SafetyG. S. MacLeod Winding-machineR. C. Campbell	T. W. Martin	
Windmill C A Sterner Window-chair S Allinger	Car doors and steps, Means for operating passenger	
Window-cleanerJ. W. Gibbons	Car. Dump- (2 pats.)F. S. Ingoldsby Car-fenderW. H. Martin	
Window-screenC. F. Dudley Wood, ImpregnatingC. S. Smith	Car-fenderJ. B. Bailey	
Wrapping-machine E. R. Knott Wrench W. A. Seils	Car. Motor	
WrenchJ. W. Giffen	Car-roof constructionJ. J. Hoffman	
Wrench C. O. Carlyle Wrench A. S. E. Metcalf	Car-roof construction, MetallicJ. J. Hoffman	
Zinc oxid, Manufacture ofA. Blum	Car-stakeP. E. Shoemaker	
	Car-stopping mechanism, RailwayF. C. Williams	
Issued May 30, 1911.	Car underframe, TankJ. M. Rohlfing Car-vesfibule trapJ. Filion	
	Car wheel or tire blanks, Manufacturing	
MECHANICAL PATENTS.	Cars or the like. Safety device for	
Acid and other vapors, Dehydrating nitric H. Pauling	Cars, Transmission-gearing for motor	
Acid of the phenylaminoanthraquinone series, Halogenized carboxylic. F. Ullmann	J. O. Michand Carbureter W. M. Gentle	
zing zimegeminea emboaşını emianii	Carbareter	

Carbureter. Card-holder Card-holder Cardboard blanks, Machine fo E Carding-machine Carpet-sweeper. J. V Carriage and like vehicle. Ba Carriers, Elevated track for J. Casket-handle. A. Catch. Cattle-guard. F. Cement-kilns. &c., Coal-feedin for rotary Ceutrifngal separators, Arre for. Chain-links, Manufacturing. Chairs, Device for councefin sticks to. Charcoal-hagging machine. Chiffoniers, &c., Finishing rav Chuck. J. V Chuck. G. W. He Churn Churuing or mixing apparatus	J. L. Fritz .S. Freeman
Cardboard blanks, Machine fo	r making W. Bonfield
Carding-machineJ. V Carpet-sweeperJ. V Carriago and like vobielo Ro	V. Hardman V. Du Lauey
Carriers, Elevated track for	.G. Harding (Reissue)
Caskef-handleA	C. Fitzgerald M. Holsteiu
Cattle-guardF. Cement-kilus &-c Coul-feedin	A. E. Waller J. Dahlherg
for rotary	H. E. Kiefer stiug device
for Chain-liuks, Manufacturing	O. Ohlsson H. Howson
Chairs, Privot-piu for	.J. M. Dodge ig hats and E Ambrock
Charcoal-hagging machine Chiffoniers, &c., Finishing rate	J. A. Mansou il edges on
Chuck	V. Newmaker . J. Kimman
Churn	J. R. Gilda H. S. Brown
Churn Churuiug or mixiug apparatus Circuit-breaker Circuit-coutroller, Pressure-op	C. C. Badeau erated
Clamp.	.F. J. Frasier E. Adell
Cloth-piler	R. R. Atmore
Clothes-line rcelC. Cluster-socket	H. Roderick J. H. Dale
Clamp. Cleaning and drying mitt Cloth-piler. I Cloth-treating apparatus. Clothes-line reel. C. Cluster-socket Clutch, Hydranlic. Ccal-cutting machine. Coaster-brake. Cock, Gas. F	P. Cramer L. Thomas
Cock, GasE	I. S. HipwellL. Popp
Coin-controlled apparatusS. Coin-controlled lock	R. Beal et al. J. E. Phillips
Concrete floor construction ()	rcement for H. Brussel Reissue)
Coaster-brake. Coek, Gas	F. C. Taxis
Concrete pole, Reinforced1	H. O'Beirne E. L. Williams
Concrete ranway-ne	I. Chadhourne
Converting chair. Conveyer. Cop-carrier.	.W. Thurman .J. B. Hyde
Correspondent Correction of Control of Contr	E. Doolittle
Cotton-enopperE. Cotton-picking machine	U. G. Reagan
Couch and bed, Convertible Cover for kettles, &c	I. Mason J. E. Cepeda
Crib. FoldingP. Crusher-headV. V. Cultivator Corn-	N. Mason, Jr.
Cop-carrier Corn-popper Corrsef. J. Cotton-chopper J. Cotton-chopper E. Cotton-picking machine Couch and bed, Converfible. Cover for keftles, &c. Crib. Folding P. Crnsher-head V. Cnltivator, Corn- Cultivator-frame, Adjustable. Current motor, Alternate- Curtain-strefeher Cushioning devices, Hanger	M. Willmore
Current motor, Alternate	.A. W. Roper V. A. Fynn
Cushioning devices. Hanger	.W. R. Munn
Cushioning devices, Hanger Cuspidor	F. O. Kilgore W. Lovejoy
Cut-off, Fluid	E. Apt et al.
Cycle attachment, MotorC. Cycles, &c., Coaster-hub for	L. StickelbautS. Cooper
Cycles, &c., Coaster-hub for Cycles, motorcycles, &c., pedal-gear for Cylinder-grinding machine. E. Damper, Pipe	Variable-speedM. Tilbet
Cylinder-grinding machine. E. Damper, Pipe	and W. Stone .W. Kennedy
Dish-washing machineH Disinfecting apparatus	. A. Johnston G. Harker
Dish-drainer. Dish-washing machine. H Disinfecting apparatus. Display-cabinet E Display device. Display-rack. Display-rack Display-rack for rolls of me	C. Smith et al.
Display-rack	J. J. Manen M. E. McCabe
Distillation	.M. D. Scott R. J. McNitt
Door construction, Metal Door-motor controller	J. F. McElroy
Door or wall of sheet metal. Door. Silo-	P. M. Wege .G. W. Reese
Display-rack for rolls of me Distillation Door construction, Metal Door-operating device. Door or wall of sheet metal. Door, Silo Door-stop. Draft device. Drawer, Index-card.	.B. F. FowlerW. Minor
Draff device. Drawer, Index-card. Drying apparatus. Drying edible pastes. Drill. Drill-bit. Drive mechanism, Equalizing Driving connection, Resilicut. Dumping apparatus. Duplicating-machiue. Dust-collector. Dye and making same, Azo. Dye of the anthraquinone so W. F. Dye. Vat (2 pats.). P. T. Dycing apparatus, Fabric. L. Derree	A. J. Rudolph O. S. Sleeper
Drill	S. Newbold P. English
Drive mechanism, Equalizing Driving connection, Resilieut.	H. Tenham J. E. Webster
Duplicating-machine	s. B. Stille A. H. Bates . D. Brewster
Dust-collector	T. Hunt B. Richard
Dye of the anthraquinone se	eries, Vat Ierzherg et al. Phomaschewski
Dycing apparatus, Fabric L. Derret	ımaux-Bulteau
Dyeing-machine. L. Derret Dyeing-machine Ear-profector	I. P. Mallison .W. F. Quinn
like machines	. м. т. пеште
Egg-tester. Elastic webbing. Electric-current controller.G. Electric current, Power-trans	W. G. Smith G. Thompson
a car-axie for generating	V. O. Duntler
Electric furnace	F. Sartorl .H. A. Rhodes
Electric switch	1 T TT 1:
Electrical energy iuto mech	.A. J. Horton unical energy,
Electric furnace. Electric motor. Electric switch. Electrical energy into mecha forJ. C. Fi Electrical control apparatus. Elevated carriers, Safety gu	.A. J. Horton unical energy, tzgerald et al. W. M. Scott

Elevating, trausporting and discharging material, Apparatus forO. Johnson Elevator-dragC. F. Clements Elevator meter and indicator.C. L. Duenkel Elevator safety attachmentJ. R. Inkster End-gate fastener, WagonF. Budlong Engine bed-plate, BeatingA. F. and O. B. Bahr Eugine coupling-pole, TractionF. Harvat Engine draft attachment, Traction
End-gate fastener, WagonF. Bndlong Engine bed-plate, Beating
Engine frame and steering device, Traction
Engine draft attachment, Traction
Excavating-machine. E. J. Mundale Excavator. R. P. McCormick Exhaust-stiencer. G. C. Palmer Explosive. F. M. Marshall Explosive-engine. A. Y. Edwards Extension-table, Round-top. G. W. Graves Extension-table, Round-top. C. W. Munz Eyeglass-holder. L. W. Price Fabrics, Manufacture of cord. T. Sloper Fastener stud, Detachable snap A. H. Greeuebaum
Faucet. G. E. Clapp Feed-mixer. G. E. Richmond Feed, Steam. L. J. Black Feed-trough. D. C. Worsham et al. Feed-water regulator. O. E. Williams
Fence-machine
Film-rewinder. P. L. Blasser Filter. K. Kiefer Fire-alarm. H. G. Perkins et al. Fire-alarm, Thermal electric J. W. Mowbray Fire-escape. J. C. Covert
Fastener stud, Detachable snap
Flow-controlling mechanism. J. W. Ledoux Fluid operated and operating device, Rotary
ary. A. B. Calkins Fluids, Method and apparatus for determining the amount of impurities in W. P. Digby et al. Flushameter. J. F. Thorsk Fly-trap. W. Kurlbaum Flying-machine. J. W. Harrison Flying-machine aeroplane. J. T. Rydberg Flying-machine wing. W. Kriedter et al. Folding box. J. A. Wagnitz Folding chair. E. H. H. Ashton Food and o'l from cotton-seed, Preparing stock. W. A. Willis et al. Form, Packing- P. A. Smith Fruit-drier. P. L. Whitestine Fuel. M. Fulton Fuel-feeding apparatus, Fine-J. A. Welton Fuel-feeding apparatus, Fine-J. A. Welton Furnace-gate. A. F. Dawson Furnaces, Meaus for withdrawing dust and fumes from zinc or similar. Furniturc. L. N. Bachand Game apparatus. G. H. Miller Game-fork. A. P. Schneider Garbage, System of and apparatus for treating. F. G. Wiselogel Garment. V. M. Schmitz Garment-clasp. J. C. Marston Gas-burner. B. F. Jacksou Gas generator, Acetylene- A. C. Grant Gas-globe holder and burner-tube. H. H. Martin et al.
Folding box J. A. Wagnitz Folding chair E. H. H. Ashton Food and o'l from cotton-seed, Preparing stock W. A. Willis et al. Form, Packing P. A. Smith Fruit-drier P. L. Whitestine
Fuel
fumes from zinc or similar E. D. Delattre Furniture. L. N. Bachand Game apparatus. G. H. Miller Game-fork. A. P. Schneider
Garbage, System of and apparatus for treating. F. G. Wiselogel Garment. V. M. Schmitz Garment-clasp. J. C. Marston Gas-burner. B. F. Jackson Gas-generator, Acetylene. A. C. Grant
Gas generator, AcetyleneJ. Carroyer Gas-globe holder and burner-tube H. H. Martin et al. Gas-valve, AutomaticW. B. Stoudt GearingI. S. Freeman Glass, Imitating onyx or marble on F. L. Hill Glassware, Burner for fire-polishing A. J. Sanford
Glassware, Burner for fire-polishing
Grapple. L. J. F. Stuart Grease-cup H. O. Smith Grinding-mill F. A. Ryther Gun, Tubular-magazine repeating W. Bennett Hair for felting or like purposes, Treat-
ment of
Glassware, Burner for fire-polishing. A. J. Sanford Glassware, Fire-polishing. A. J. Sanford Glassware, Fire-polishing. A. J. Sanford Glove-turning machine. G. N. Abbott Grapple. L. J. F. Stuart Grease-cup. H. O. Smith Grinding-mill. F. A. Ryther Gun, Tubular-magazine repeating. W. Bennett Hair for felting or like pnrposes, Treatment of B. Ronjat Harrow. M. S. Madseu Harvester, Beet. L. I. Minato Hat blocking and shapiug machine. G. Atherton Hat-brim mold. H. Brnekshaw Hat-rim polisher. A. M. Pesses Hay-rack. W. F. Rodebaugh Hay-rake. D. L. Lapeyrouze Hay rake and stacker, Combined. C. Pearson Heating apparatus. J. M. W. Kitchen Heating installation, Hot-water, I. Wassiliew Heating system, Interior. E. M. Matthews Heel-breasting machine (Reissue). E. A. Webster Heels and soles for boots and shoes. Machine for finishing. C. B. Tuttle Heels of boots and shoes, Machine for attaching. M. T. Denne Hollow bodies and especially of head-coverings from fibrons material, Manufacture of. R. Knoll Hollow bodies to plates, Attachment of
Heels and soles for boots and shoes. Machine for finishing
of. R. Knoll Hollow hodies to plates, Attachment of thin-walled. P. Schickert Horns, Construction of warning. F. Berton Worseshoe attachment. C. Lindermann Hose-band. G. Ferguson Hose, Metallic spiral. E. Witzenmann Hose-nozzle and sprinkler. J. H. Bolitho Hose nozzle-holder, Garden. T. N. Jones

Hose-reel
Hydrocarbon burner, LiquidS. Elliott Ice-breaker E. Puplessis
Ice-breaker
Index Book W. H. Jones and B. Holmes Ink-fountain T. J. Russo Ink-well W. B. Cogger Inkstand F. M. Ashley
Insect-destroying apparatusA. Brisbane Insect-trapG. T. Rea
Ironing-machine H. G. Grosse et al. Ironing-table G. R. Dobscon Irrigating system J. T. Donahoo Jewels in form of a setting; Device for
Iris-diaphragm
Knitted web and making the same
Lamp burner, VaporC. A. Tates Lamp-langerL. B. Horubeck Lamp-shadeJ. J. Ritter Lamp-sockets, Adjustable casing for E. H. Freeman
Lamp, Vapor
compound W. Mattheiss Last J. A. Brogan Last H. Thomson Lasts or last parts, Forming E. J. Prindle Latch, Door J. J. Murphy
Lasts of last parts, Forming E. J. Frindle Latch, Door
Leather, Treating
Lenses, Manufacture of bifocal J. Aitchison Lever mechanism. Platform- F. H. Buckingham Life-preserver. J. E. Prescott Lighter. W. C. Blaska Lighting device. M. L. Haws Lighting-fixture. J. W. Phillips Lightning-arrester, Electrolytic. E. E. F. Creighton Liquid-fuel burner. J. E. Dunkley Liquid-fuel bnrner. U. G. and C. T. Boswell Liquid-separator liner, Centrifugal. O. Ohlsson
Lighting device. M. L. Haws Lighting-fixture. J. W. Phillips Lightning-arrester, Electrolytic.
Liquid-fuel burner J. E. Dunklev Liquid-fuel burner. U. G. and C. T. Boswell Liquid-separator liner, Centrifugal Obleson
Loading-machine. E. Smith Lock. R. Brohmann Lock-seam tube. P. H. Friel Locking means, Closure. C. J. Liunggreu
Locomotives and other railway-vehicles.
Loom for weaving, Weft-replenishingJ. W. Cook Loom let-off mechanismE. H. Ryon
Loom, Narrow-wareE. R. Holmes Looms, Fork-grid clearer forS. D. Eubanks Lubricating journal-box A. B. Wright et al.
Electric-motor drive forN. W. Storer Loom for cross or gauze weaving. H. M. Marsh Loom for weaving, Weft-replenishing J. W. Cook Loom let-off mechanism. E. H. Ryon Loom, Narrow-ware. E. R. Holmes Looms, Fork-grid clearer for. S. D. Eubanks Lubricating journal-box. A. B. Wright et al. Lubricator. J. Zsarko Magnesium and magnesium alloys, Purification of. R. Hoffman et al. Mail-bag catching and delivering device. J. H. Bowling
Manure, Making
position forR. W. and C. W. Collinson Mask, Wrinkle
Measuring instrument, AngleF. J. B. C. Cordeiro et al. Mechanical movementT. A. C. Both Medical appliancesJ. W. Ballard
Mercerizing cotton, preferably in form of skeins
Metal-stamplug press. E. H. Vogel Metal strips, foil, sheets, or ribbons. Apparatus for making. E. H. Strange
Measuring device for gas machines. J. F. Andres Measuring instrument, Angle
lar metals and producing alloys of these metals. ReducingG. Boericke Metallic oxids. Reducing refractory
Metallic tie and rail-fastener L. M. Siblev Meter-bracket
Milling process H. M. Blinn Mining-machine W. Guernsey Mirrors, Mannfacture of silvered-glass E. Hoorieky
Molder's flask and bar therefor R. S. Buch Molding apparatus
Motor control
Motor control. H. S. Mustin Motor-controller. C. T. Henderson Motor governor. SpringL. M. Ferguson Motors. Short-circuiting device for magneto-electric igniting apparatus for explosionG. Honold Music-leaf turner. M. Vineyard Musical instrument, Automatic. W. F. Bayer
Musical instrument, Automatic

Music-roll holder
Nail leather-heading machine
Napkin-holder L. H. Robinsou Nitrogenons compounds, Making
Noise-making deviceG. II. Merrick Nozzle, SuctionC. L. Goughnour
Nut-lock L. Hines Nut-lock G. J. von Hagel Nut. Safety waron H. E. Oliver
Oil burner, Crnde
Oil, Miscible
Optical combinationO. Eppenstein Optical test instrument.H. E. MacLaughliu
Ordnance, Gas-exploded. E. H. Hamilton Ore and coal jig. E. A. Wall
Ores, Treatment of anriferons and argentiferous
Oven, Baker's
Music-roll holder Musical instrument, Self-playing
crude L. W. Browu Phonograph S. T. E. and J. E. White
Piano-action
Picture machines, Film-holding device for moving C. R. Uebelmesser
Pile-band, Weldless H. A. McLaughlin Piling, Sheet J. F. Johnston
Pipe coupling, Automatic train
Pipe-hanger I. Cowles Pipe-joint M. H. Dudley Pipe-joint Rotary W. A. Greenlaw
Piston-head, Spring-packingL. Pettit Pitman connectionW. L. Chrysler Plepon Lyting Adjusting and grindling
Plant-protectorA. G. McAdie
Platen-press inking mechanism
Pneumatic apparatus. J. Schwertner Pneumatic wheel. O. P. Downing
Pocket, GarmentJ. Koretsky Pocket, SafetyI. L. Lyons Pots and other vessels. Lid of cooking
H. J. G. Adamson

Powder-divider	
Printing and delivering machine. Ticket. J. M. Lipes Printing device. Ticket. C. Maushel Printing-machine gripping mechanism. L. E. Morrison Printing-machine gripping mechanism. L. E. Morrison Printing-plate-making apparatus. M. A. Droitcour Printing-press. T. Winhack Printing-press. R. Davis Printing-press. R. Davis Printing roll-paper, Apparatus for. J. Barlow Projecting apparatns. H. C. White Propeller. J. Hayes Propulsion of vessels in water. J. N. Bailey Propulsion of vessels in water. J. N. Bailey Propulsion of vessels, Means for the W. H. Witte Pump. E. S. Murphy Pnmp. C. C. Wakefield Pump. Beep-well. J. Hahn Pump-motor. J. F. Andres Pump-piston, Fluid-packing. J. Hahn Pump-motor. J. R. Kinney Pumping-machine, Pnenmatic. C. E. Harker Pnsh-butten Switch. M. H. Spielman Pnzzle G. W. Naylor Puzzle H. C. Davidson Quartz-mill. S. C. Arnold Rack. C. D. Wiselogel Radiator J. M. Fedders Rail-anchor W. M. Mitchell Rail-end clamp. A. H. Shoemaker Rail-joint R. Zeppenfeld Rail-joint R. Zeppenfeld Rail-joint R. Zeppenfeld Rail-joint R. T. Berry Rail-joint and tie-plate, Combined Rail-giont Rail-giont R. Steininger Railway-cross-tie J. G. Robinson Railway-cross-tie J. G. Robinson Railway-cross-tie J. G. Robinson Railway-rails and other like bars, Treat- ing steel (2 pats.) J. C. Russell Railway-switches, Adjustable crank for. T. O'Brien Railway-switches, Adjustable crank for. T. O'Brien Railway-switches, Adjustable crank for. T. O'Brien Railway-tie Metal. M. H. Liston et al. Railway-tie G. P. Winsall Railway-tie G. P. Riess et al. Razor-guard, Safety. D. Deuel	Powder-dividerW. M. BurLle et al. Powder. Graining-rolls for graining ex- plosionF. I. du Pont Power-drillD. L. McTarlane Power plant and crematory. V. M. Hyde Power-transmitting mechanism.
Printing-plate-making apparatus.	Printing and delivering machine. Ticket J. M. Lipes Printing device. Ticket C. Marshel Printing-machine L. E. Morrison Printing-machine gripping mechanism
Projecting apparatns. H. C. White Propulsion of vessels in water. J. N. Bailey Propulsion of vessels, Means for the W. H. Witte Pump. E. S. Murphy Pnmp. C. C. Wakefield Pump, Deep-well J. Hahn Pump, Deep-well J. Hahn Pump-motor. J. F. Andres Pump-piston, Fluid-packing J. Hahn Pump, Rotary J. R. Kinney Pumping-machine, Pnenmatic C. E. Harker Pnsh-butten Switch M. H. Spielman Pnzzle G. W. Naylor Puzzle H. C. Davidson Quartz-mill S. C. Arnold Rack C. D. Wiselogel Radiator J. M. Fedders Rail-anchor W. M. Mitchell Rail clamp, Guard- (2 pats.) G. L. Hall Rail-joint R. Zeppenfeld Rail-joint R. Zeppenfeld Rail-joint R. T. Berry Rail-joint R. T. Berry Rail-joint A. H. Steininger Railway cross-tie J. G. Robinson Railway-crossing guard E. A. Steininger Railway-rails and other like bars, Treating steel (2 pats.) J. C. Rnssell Railway-switch P. D. Hibner Railway-switch P. D. Hibner Railway-switch R. R. Schuster Railway-tie Metal M. H. Liston et al. Railway-tie Metal M. H. Epper M. E. Deuel (Continued in Angust Number.)	**************************************
Pump. E. S. Murphy Pnmp. C. C. Wakefield Pump, Deep-well. J. Hahm Pnmp-motor. J. F. Andres Pump-piston, Fluid-packing. J. Hahm Pump. Rotary. J. R. Kiuney Pumping-machine, Pnenmatic. C. E. Harker Pnsh-butten Switch M. H. Spielman Pnzzle G. W. Naylor Puzzle G. W. Naylor Puzzle H. C. Davidson Quartz-mill S. C. Arnold Rack. C. D. Wiselogel Radiator. J. M. Fedders Rail-anchor. W. M. Mitchell Rail clamp, Guard- (2 pats.). G. L. Hall Rail-end clamp. A. H. Shoemaker Rail-joint R. Zeppenfeld Rail-joint R. Zeppenfeld Rail-joint R. T. Berry Rail-joint and tie-plate, Combined. G. A. Hassel Rails, Anticreeper for F. Seaberg Railway-crossing guard. E. A. Steininger Railway-rails and other like bars, Treating steel (2 pats.). J. C. Rnssell Railway-switch P. D. Hibner Railway-switchs, Adjustable crank for. T. O'Brien Railway-tie, Metal. M. H. Liston et al. Railway-tie, Metal. M. H. Liston	Projecting apparatns
Pnsh-button Switch. M. H. Spielman Pnzzle G. W. Naylor Puzzle G. W. Naylor Puzzle H. C. Davidson Quartz-mill S. C. Arnold Rack C. D. Wisclogel Radiator J. M. Fodders Rail-anchor W. M. Mitchell Rail clamp, Guard- (2 pats.) G. L. Hall Rail-end clamp A. H. Shoemaker Rail-joint J. M. Johnson Rail-joint J. M. Johnson Rail-joint R. Zeppenfeld Rail-joint R. T. Berry Rail-joint and tie-plate, Combined G. A. Hassel Rails. Anticreeper for F. Seaberg Railway cross-tie J. G. Robinson Railway-rossing guard E. A. Steininger Railway-rails and other like bars, Treating steel (2 pats.) J. C. Rnssell Railway-switch P. D. Hibner Railway-switch P. D. Hibner Railway-switches, Adjustable crank for T. O'Brien Railway-tie G. P. Winsall Railway-tie Metal M. H. Liston et al. Railway-tie Metal M. M. H. Listo	Pump. E. S. Murphy Pnmp. C. C. Wakefield Pump, Deep-well J. Hahn Pump-motor J. F. Andres Pump-piston, Fluid-packing J. Hahn Pump. Rotary J. R. Kinney Pumping-machine, Pnenmatic
Rails. Anticreeper for F. Seaberg Railway cross-tie J. G. Robinson Railway-crossing guard . E. A. Steininger Railway-rails and other like bars, Treating steel (2 pats.) J. C. Russell Railway-sigual J. P. Coleman Railway-switch P. D. Hibner Railway-switches, Adjustable crank for T. O'Brien Railway-tie G. P. Winsall Railway-tie K. R. Schuster Railway-tie Metal M. H. Liston et al. Railway-tie, Metal M. H. Liston et al. Railway vehicle, Electric G. M. Eaton Range P. Riess et al. Razor-guard, Safety B. Deuel Continued in Angust Number.)	Pnsh-butten Switch. M. H. Spielman Pnzzle G. W. Naylor Puzzle G. W. Naylor Puzzle H. C. Davidson Quartz-mill S. C. Arnold Rack. C. D. Wiselogel Radiator J. M. Fedders Rail-anchor W. M. Mitchell Rail clamp, Guard- (2 pats.). G. L. Hall Rail-end clamp A. H. Shoemaker Rail-joint J. M. Johnson Rail-joint R. Zeppenfeld Rail-joint R. T. Berry Rail-joint and tie-plate, Combined.
Railway-tie	Rails. Anticreeper for F. Seaberg Railway cross-tie J. G. Robinson Railway-crossing guard . E. A. Steininger Railway-rails and other like bars, Treating steel (2 pats.) J. C. Rnssell Railway-sigual J. P. Coleman Railway-switch P. D. Hibner Railway-switches, Adjustable crank for
	Railway-tie. G. P. Winsall Railway-tie. K. R. Schuster Railway-tie. Metal. M. H. Liston et al. Railway vehicle, Electric- G. M. Eaton Range. P. Riess et al. Razor-guard, Safety. B. Deuel Continued in Angust Number.)

INEACH TOWN and district to ride and exhibit a sample Latest Model "Ranger" bicycle furnished by us. On ragents everywhere are making money fast. Write for full particulars and special offer at once.

NO MONEY REQUIRED until you receive and approve of your bicycle. We ship to anyone anywhere in the U. S. without a cent deposit in advance, prepay freight, and allow TEN DAYS' FREE TRIAL during which time you may ride the bicycle and put it to any test yon wish. If you are then not perfectly satisfied or do not wish to keep the bicycle ship it back to us at our expense and you will not be out one cent.

FACTORY PRICES We furnish the highest grade bicycles it is actual factory cost. You save \$10 to \$25 middlemen's profits by bnying direct of us and have the manufacturer's guarantee behind your bicycle. Do NOT BUY a bicycle or a pair of three from anyone at any price until you receive our catalogues and learn our unheard of factory prices and remarkable special offers to rider agents.

YOU WILL BE ASTONISHED when you receive our beautiful catalogne and study our superb models at the wonderless money than any other factory. We are satisfied with \$1.00 profit above factory cost. Orders filled the day received.

SICYCLE DEALERS, you can sell our bicycles under your own name plate at double our prices. SICCOND HAND BICYCLES. We do not regularly handle second hand bicycles, but usually have pumber on hand taken in trade hy our Chicago refall stores. These we clean eat or any transfer to the second hand bicycles, but usually have

BICYCLE DEALERS, you can sell our bicycles under your own name plate at double of the day received.

SECOND HAND BICYCLES. We do not regularly handle second hand hicycles, but usually have a number on hand taken in trade by our Chicago retail stores. These we clear out promptly at prices ranging from \$3 to \$8 or \$10. Descriptive bargain lists mailed free.

COASTER-BRAKES, single wheels, imported roller chains and pedals, parts, repairs and equipment of all kinds at half the regular retail prices.

SOURCE DEALERS, you can sell our bicycles under your own name plate at double to the second hand hicycles, but usually have a number of hand hicycles, but usually have ranging from \$3 to \$8 or \$10. Descriptive bargain lists mailed free.

COASTER-BRAKES, single wheels, imported roller chains and pedals, parts, repairs and equipment of all kinds at half the regular retail prices.

SOURCE DEALERS, you can sell our bicycles under your own name plate at double to the second hand hicycles, but usually have a number of hand bicycles, but usually have a number of hand bicycles

Self-healing Tires A SAMPLE PAIR \$10.00 per pair, but to introduce we will sell you a sample pair for \$4.80 (cash with order \$4.55.)

NOMORETROUBLE FROM PUNCTURES

MONORE TROUBLE FROM PUNCTURES

NAILS, Tacks, or Glass will not let the air out. A hundred thousand pairs sold last year.

DESCRIPTION: Made in all sizes. It is lively and easy riding, very durable and lined inside with a special quality of rubber, which never becomes porous and which closes up small punctures without allowing the air to escape. We have hundreds of letters from satisfied customers stating that their tires have only been pumped up once or twice in a whole season. They weigh no more than an ordinary tire, the puncture resisting qualities being given by several layers of thin, specially prepared if the puncture of these tires is \$10.00 per pair, but for advertising purposes we are making a special factory price to the rider of only \$4.80 per pair. All orders shipped same day letter is received. We ship C. O. D. on approval. You do not pay a cent until you have examined and found them strictly as represented.

We will allow a cash discount of 5 per cent (thereby making the price \$4.55 per pair) if you send FULL CASH WITH ORDER and enclose this advertisement. You run no risk in sending us an order as the tires may be returned at OUR expense if for any reason they are not satisfactory on examination. We are perfectly reliable and money sent to us is as safe as in a bank. If you order a pair of these tires, you will find that they will ride easier, run faster, wear better, last longer and look finer than any tire you have ever used or seen at any price. We know that you will be so well pleased that when you want a hircycle you will give us your order. We want you to send us a trial order at once, hence this remarkable tire offer.

If YOU NEED TIRES don't buy any kind at any price until you send for a pair of Hedgethorn Functure-Froof tires on approval and trial at the special introductory price quoted above; or write for our high roand Sundry Catalogue which describes and quotes all, makes and tires of tires at about half the basel price.

FOON THE AD GYGLE COMPANY, CHICAGO, ILL.

LIMEAD GYGLE COMPANY,

An Irresistible Bargain

\$1.75 Value for Only \$1.15

ALL FOR ONLY

One Year's Subscription for McCall's Magazine, Any 15-Cent McCall Pattern you may select, One Year's Subscription for the Inventive Age

McCall's Magazine

Is a large, artistic, handsomely illustrated hundred-page monthly magazine. It contains sixty new Fashion Designs in each issue. Every woman needs it for its up-to-date fashions, entertaining stories and complete information on all home and personal topics. Over one million subscribers. Acknowledged the best Home and Fashion Magazine. Regular price, 5 cents a copy. Worth double.



McCall Patterns

So simple you cannot misunderstand them. Absolutely accurate. In style, irreproachable. You may select, free, any McCall Pattern you desire from the first number of the magazine which reaches you. Regular price, 15 cents.

The Inventive Age.

A journal of manufacturing industry and scientific progress. The indispensable paper for patentees. Contains matter and information not found elsewhere. Regular price, \$1.00

DON'T MISS THIS EXTRAORDINARY OFFER. THE INVENTIVE AGE Publishing Co., Washington, D. C.

The DIAMONI

SELF-FILLING AND SELF-CLEANING

Fountain Pen.

IT IS AWAY AHEAD OF ANY OTHER PEN MANUFACTURED BE-CAUSE OF ITS SELF FILLING AND SELF-CLEANING FEATURES





Including one year's subscription to "The Inventive Age."

Price \$2.00.

No Lost Time.

No Solled Fingers.

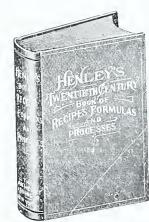
Address---

INVENTIVE AGE PUB'L. COMPANY, WASHINGTON, D. C.

HENLEY'S TWENTIETH CENTURY BOOK OF

Recipes, Formulas & Processes









Edited by GARDNER D. HISCOX, M. E.

Price, \$3.00 Cloth Binding

\$4.00 Half Morocco Binding

800 large Octavo (6 x $9\frac{1}{2}$) Pages.

Contains over 10,000 Selected Scientific, Chemical, fechnological, and Practical Recipes and Processes, Including Hundreds of so-called Trade Secrets for every business.

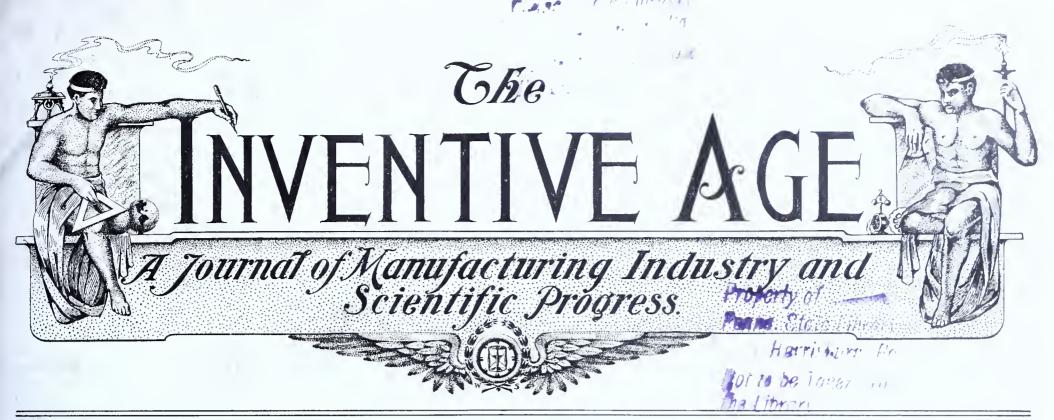
This is THE BOOK everyone should have at his command who seeks PRACTICAL, ACCURATE KNOWLEDGE and GUIDANCE in his every-day work, as no book has ever been published which so fully meets the multifarious requirements of the factory, the workshop, the laboratory, and the household. In preparing the work for so exacting ' and numerous a class of readers the Editor has exerted every effort to present only information which is practical, accurate and modern.

Address---

INVENTIVE AGE PUB'L. COMPANY WASHINGTON, D. C.

SEND FOR OUR FREE CATALOGUE OF BOOKS FOR INVENTORS AND MECHANICS.

918 F St., Washington, D. C. PUBL'G CO., INVENTIVE AGE Address:



Vol. XXIII. No. 8. }

WASHINGTON, D. C.—AUGUST 1, 1911.

SINGLE COPIES 10 CENT ONE DOLLAR A YEAR

KRUPP NEW BOMB CANNON. THE

By C. VAN LANGENDONCK.

THE well-known manufacturer of German war material, Friedrich Krupp, has recently devised a new type of cannon, "the bomb cannon" which presents some striking differences in construction as well as in appearance from any other type of modern ordnance.

The bomb cannon is primarily intended to come to the rescue of the infantry during the storming of a fortress, viz., the last stage of its siege. Being only 300 yards in maximum range, it should be moved up to that distance from the marks to be fired on. On the internal assailing ground, traversed by trenches and approaches, this can be effected only by transport through the latter. Having thus to be conveyed through narrow trenches of zigzag shape, the gun must necessarily

As the transportable gun, finally, is only 32 inches in height, it will be protected against fire and absolutely covered from sight, during its transport through the approaches.

The gun, about one yard in length and 2 inches in bore, is forged from Krupp crucible steel and is a muzzleloader with a smooth bore, the rear part of which is widened to form the combustion chamber. The bottom of that chamber is pierced at the back to facilitate cleaning, being tightly closed by a cone and screw.

An inclined vent leading from the bottom to the combustion chamber (the upper part of which is threaded to receive the friction screw plug) serves to ignite the powder charge.

The gun is located on the carriage

sharp angles to be readily negotiated. part of the gun is turned off in roller shape, with a view to receiving the heavy plate used in firing the bomb. The gun carriage may be moved round a trunnion, on a wooden platform permanently connected with it. Its steel-plate walls are connected together at the front and back by transverse walls of the same material.

toothed wheel meshing with a toothed rim located on the platform, and which by turning the gun round the rear trunnion, will alter its lateral orientation up to 10 degrees on either

The trigger cord passes through a slot in the rear transverse wall of the carriage. Each of the four angles of



THE NEW KRUPP BOMB GUN IN BATTERY READY FOR FIRING.

wall there is a box containing an axle with hand-wheels for the elevating arrangement, which through bevel wheels, worm and worm wheels, operates a toothed-arc driving axle, passing through the two carriage walls. the toothed wheel of which meshes

> moving it to and fro. In the right-hand carriage wall is located the hand-wheel of the sidepointing arrangement which, through worm and worm wheel, acts upon a

> with the toothed arc of the gun, thus

They are traversed by the axle in- the wooden platform is provided with tended to receive the wheels used dur- a ring for carrying the gun. Two ing the transport of the gun. In the hand-spikes fitted into bearings profront part of the left hand carriage vided in the platform, and secured by pins, serve to convert this piece of ordnance into a transportable gun.

The sighting arrangement comprises a tube with pointing telescope. which can be fitted into the bearing in the right-hand wall of the carriage. This tube carries at the top a pointing circle divided into 360 degrees, on which the pointing telescope is arranged in an adjustable position.

The ammunition of the bomb cannon comprises a bomb or shell with its fuse, the powder charge, and the fric-



THE NEW KRUPP BOMB GUN READY FOR TRANSPORTATION.

be of small weight, to be transported by a few men even on soft ground. In view of its small breadth it can be readily conveyed through trenches at least one yard in width at the bottom, the more so as its short length enables

by means of two trunnions placed at about its center. The left hand trunnion carries an index, allowing the actual elevation of the gun to be read from a graduated arc, intermediary between 43 and 80 degrees. The front tion screw plug required for ignition.

The bomb or shell comprises a spherical cover (see cut) filled with explosive and traversed by a tube threaded at its top and carrying toward its center a fuse and fuse charge. The lower part of the tube serves to receive a rod used in firing the bomb. This rod carries a heavy collar and a plate on which the bomb is located, and the rod penetrates into the gun as well as into the bomb, thus firmly securing the latter.

The fuse is a time-fuse, its duration of combustion being somewhat longer than the duration of flight of the projectile. As the latter strikes, the fuse will ignite the fuse charge, which in its turn causes the explosive of the bomb to explode. The gun charge consists of grape-shot, filled with smokeless powder. On pulling back the trigger cord, the gun charge is ignited by the jet of fire produced on the screw plug. The powder gases striking against the end of the rod will drive the latter out of the gun, together with the collar and projectile. As soon as the end of the rod is slackened, the projectile, owing to its inertia, continues on its way, while the rod, with the collar and plate, presently fall back on the ground.

The effect of the projectile is exclusively due to the large amount of explosive contained therein. The cover of the bomb has been made relatively thin. In fact, its thickness only suffices to prevent its being broken on striking hard objects, such as concrete, armor, etc. The action of fragments is less important than the powerful smoke, fire, and air pressure effects produced by the enormous charge of explosives. In fact, this action will be so violent as to destroy all life in its neighborhood, the more so as the asphyxiating smoke and poisonous vapors will penetrate everywhere.

Advertisements on Wheels.

Not only are meadows and mountains defaced with advertisements, but we are threatened with having the vehicles on our streets made the medium of further disfigurement. It has occurred to some enterprising promotor that the wheels of delivery wagons represent a vast amount of waste space, and a sign intended to be fastened to the axles has been devised. The sign plate, made of metal, is to be held in place by a specially designed nut, with a plate cast to the free end. This nut is of the shape of the ordinary axle nut, except the plate, which has a slot onehalf of its circumference, to allow the adjustment of the sign plate. The plate is concaved on the side that comes in contact with the sign, allowing perfect contact at all points, which is intended to keep the device from rattling as the vehicle moves.

To keep themselves posted in the progress of the arts in which they are interested, inventors and manufacturers should subscribe for the IN-VENTIVE AGE, which publishes a list of all patents issued each month. The low subscription price and the character of the publication entitle it to the support of all the inventors of the country.

MAN-CARRYING KITE.

Fig. 1 giving the designer about to S. F. Perkins, attained an altitude of

MAN-CARRYING kites are shown in pocket,) while Fig. 2 shows him in the accompanying illustration, mid air. At Kansas City the inventor, make an ascension in Philadelphia 375 feet, and later gave a practical



FIG. 1.

(the first special permit ever granted in any American city being in his

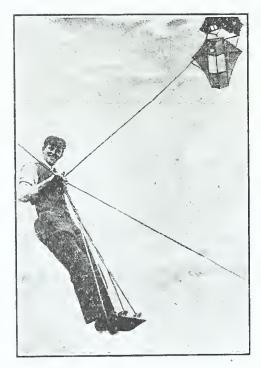


FIG. 2.

demonstration of the value of the man-carrying kites in transmitting wireless communications, messages having been sent from San Francisco to Los Angeles, California, and by means of the kite cable transmitter, to the operator on the ground.

The altitude record made in California was 385 feet, this being also a duration kite record, the designer staying up in the air for 90 minutes. The Bostonian owes his life on one occasion to the fact that several of the many kites by which he was suspended at Los Angeles parachuted, and prevented him from being dashed to death on the earth. He was 200 feet in the air when the accident occured in which Charles Willard, the aviator, collided with the cable and cut it with his bi-plane, thus severing all connections of the kites with the earth. Aviator Willard injured his front control but was able to land imsafely. mediately and Altough three kites were wrecked, Perkins landed without serious injury, the remaining kites acting as parachutes.

Making Pins.

Though the demand for pins the world over is enormous, the mills of the United States practically supply the entire demand. Formerly pins were expensive, but now they cost a mere trifle. In 1905, when the last estimate was made, the 75,000,090 people in the United States used 60,-000,000 gross of common pins, which is equal to 9,500,000,000, or an average of about 126 pins for every man, woman and child in the country.

The total number of pins manufactured in the United States, during the last census year, was about 69,-000,000 gross. There are forty or fifty factories, with several thousand employes. The business is growing rapidly.

The automatic machines which turn out pins and hooks have minimized the cost of their manufacture until the cost is practically only that of the brass wire from which they are made. A single machine does the whole work. Coils of wire, hung upon reels, are passed into machines which cut them into proper length, and they drop off into a receptacle and arrange themselves in the line of a slot formed between two dies, which and pressed form the heads, and pass along into the grip of another steel instrument which points them by pressure. They are then dropped into a solution of sour beer, whirling as they go, to be cleaned, and then into a hot solution of tin, which is also kept revolving. Here they receive their bright coat of metal and are pushed along until they have a chance to harden, when they are dropped into a revolving barrel of bran and sawdust, which cools and polishes them at the same time. And then the pin is ready for use.

Ocean Leviathans.

The latest addition to the fleet of monster vessels is the Olympic of the White Star line, which was recently launched in Ireland. Special arrangements have to be made for the launching of these huge ships, the dimensions of the Olympic being 882 feet in length, 92 in breadth, and 175 in height from keel to top of funnels; gross register, 45,000 tons and displacement, 66,000 tons. The usual timbers supporting the standing ways, and these standing ways themselves, were in this case replaced by steel castings weighing several tons, fitted with a wrought iron trigger. This trigger was pivoted in a recess in the casting, and maintained in position with its upper end engaging in a steel shod recess in the under surface of the sliding ways, by means of a hydraulic cylinder and ram pressing against the lower end. The hydraulic cylinder and ram formed a portion of the casting above referred to, and the pumps and appliances for maintaining the pressure were situated alongside the berth. When all was ready for the actual launching, the simple opening of a valve released the pressure in the cylinder and the ram was withdrawn, thus leaving the pvivoted trigger to fall away either by gravity or owing to pressure of the moving sliding ways and the weight of the vessel. To assist in starting the launch, two sets of hydraulic cylinders were placed on the heavy staging under the bow, the rams acting upon the fore ends of the sliding ways. These cylinders were connected with a hydraulic intensifier, and were collectively capable of exerting an immense force. The launching weight was 27,000 tons, the greatest ever transferred from land to water. The vessel has eleven decks, and is provided with elevators, a nursery, a gymnasium, swimming pool, a skating rink, a cafe, a racquet court, a roof garden, palm court, and other arrangements for the comfort of the passengers.

The casting of the propellers for these giant ships is an interesting operation. Pits-25 feet across and 5 feet deep-are used for the purpose, and this pit is sometimes in the form of a submerged steel tank built of rolled plate. The material used for the mold is ordinary loam and is built up from the bottom of the pit. The loam includes gravel and sand of the grade adopted by most steel foundries. Compressed air furnishes the power with which the ramming is done. There are four gates in the of two bars. When they reach the copes of the flash, and these copes are lower end of the bars they are seized bolted down as soon as the mold has dried and the pattern has been withdrawn. The molten metal is poured quickly from a 30,000-pound ladle into which the furnaces are tapped. The pouring is done rapidly for the purpose of eliminating from the metal the dross that would otherwise collect. Propeller metal pours like molten brass. Four days are usually required to properly "set" the casting, and then the mold is broken and the casting removed for finishing.

thickness of the wall, and have a dove-

tailed strip nailed on the back, so that

they are dropped into the molds and the walls cast around them. The

ease of handling these steel forms appeals to every engineer and builder

who has seen or used them. There

are no tools required other than a

hammer, as the plates are simply

It will be seen that in using the steel

forms, reinforced material can readily

be placed and the mixture poured

around it. The substantial character

of reinforced concrete construction is

no longer in question. Heretofore,

the cost has been prohibitive on

account of the lumber and labor waste

for molds or forms. A building con-

structed by the steel form method will

keyed together with steel wedges.

POURED CONCRETE HOUSES.

of years, has been realized and is now a reality, as shown in the accompanying illustrations. This concrete construction is produced by the use of unit steel forms placed in position as indicated in Fig. 2, the illustration showing a larger poured concrete house under way, the molds standing rigid as a box girder, every plate being held in line at the four corners, and the arrangement being simplicity itself.



Fig. 1.

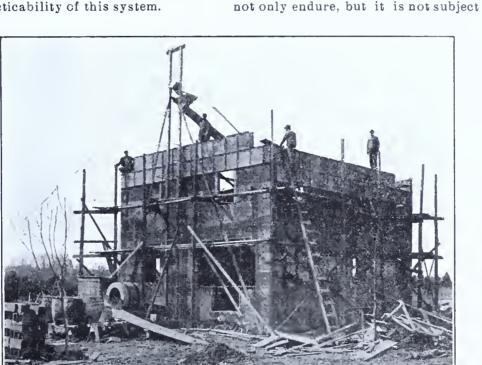
This germ-proof house is all of cement except the sash and doors, the floors being so constructed that the rooms can be flushed out with a hose. The waste heat from the kitchen range warms the house, which measures 31 feet by 18 feet, and has a porch with a depth of 6 feet. The sink and washtub in the kitchen, as well as the bath tub wash basin and water storage tank in the bathroom, are cast in cement. The poured sink and wash tray has an inclosure underneath for the garbage pail, with screen door at the outside for ventilation and removal. All of this equipment is flushed out when necessary. There is no wood trimming but stencil border only, while a small force pump furnishes water supply under pressure at small cost.

It is maintained that poured houses have come to stay, the construction being inexpensive, so that workmen may own their own cottages. There is no more danger of a cement wall sweating than a brick wall, but in a cold climate each should be furred or insulated to save in consumption of fuel. It is claimed that this system of construction not only saves cost and time and results in a faultless, handsome structure, but that it is substantial, sanitary and fire-proof and requires few repairs, the whole being built as if it were carved from a single stone.

The cement molds consist of plates of sheet steel pressed into flanged sections 24 inches square. These are clipped and wedged together, forming a trough which holds the liquid concrete until it hardens. A second trough is set up on top and filled, and the process is repeated, the lower plates being moved up as this wall hardens. These plates also serve as forms for partitions, floors and roofs. There are no bolts to rust and no cast

The poured concrete germ-proof parts to break, while all are held to-house, which has been the dream gether by steel wedges, locked by a stroke of the hammer and as easily taken down.

> Another type of concrete house consists of two floors, with a roof garden for sleeping in the open air. This measures $28\frac{1}{2}$ feet by $22\frac{1}{2}$ feet and contains six rooms and a bath, with cover corner, so that the rooms can be flushed out with a hose. All the fixtures are cast of cement, and there are fire places in each room for ventilation. Many of these homes have been poured, making beautiful reinforced concrete structures, and people are now living in them, proving the practicability of this system.



ings the plates are made from twelvegauge pressed steel for the molds. The plates are cleaned and greased each time they are raised, so that the concrete is held with a very smooth surface. The marking of the plates can be cut off, but if left gives an interesting pattern and is treated as a decoration. This divides the surface into two-foot squares with slight ridges. An unlimited scope of decoration is made possible by inlays of colored tile.

The molds make concrete building cheaper than frame, on account of the saving of lumber, and great variety of design can be attained, as this system is of standard interchangeable units, easily adapted to various dimensions.

It may be stated that a very wet mixture is used, water proofed by hydrate of lime or crude oil, in a water-proof brush coating on the exterior of the walls, keeping the moisture out altogether and giving any color desired. It will be seen that scaffolding is dispensed with, as the rigid steel forms, supported by the wall already cast, carry the planking necessary for the workmen and require no bracing. The rod reinforcement, imbedded above and below the windows and doors, prevents cracks from expansion.

In the construction of these build- to the heavy fire loss of other material, and costs less than steel, brick or wood of good grade.

Pay-as-you-Enter Cars.

The pay-as-you enter car represents a radical departure in the construction of this form of transport. For many years, plans for the arrangement of the interior of street cars were like the Medes and Persians, that alter not. It was discovered, however, that the details of car design are of immense importance in their effect on the expenses of accident claims and the economic movement of rolling stock, and since that date, all sorts of new fashions in cars have been tried, the latest of which is the pay-as-you-enter.

Some one with a taste for statistics has figured out that over two-thirds of the urban population of the United States spend about one-third of their waking hours on street cars. To the layman this seems a pretty high estimate, but it has been adopted in good faith by manufacturers of street cars. It is also estimated that about eight billion people were carried on the street car lines of this country last

The window frames are made the year. These lines, it may be remarked, carry more than seven times as many passengers as do the steam cars of the United States.

> The pay-as-you-enter cars were adopted primarily for the benefit of the companies instead of the public. It is doubtless true that many people forget to pay their fares, and it was impossible for the conductors, in the hours when there was a rush of traffic, to collect them all. It also removes temptation from the conductors, as the fares are not supposed to pass through their hands. The traveling public, as a rule, resents having to dig up a fare while holding an umbrella in a rainstorm The delays in entering the car, and having to wait while a long line of people ahead are supplied with change, tickets and transfers, are compensated for, it is calculated, by the system of separate exits and entrances, so that the outgoing crowds will not become tangled with the incoming ones.

New as these cars are, various types are already in use in different cities. Some have an extra wide vestibule at the rear, to be used both for entrance and exit, the narrow front vestibule to be used by the motorman only. Some have exits both at front and rear, the conductor standing on the back platform and receiving all fares as the people enter. Some have a side entrance, the conductor standing midway in the car. Some have no vestibules, the conductor and motorman standing within the car itself.

The advent of the new car has brought also new forms of cash registers. One commonly employed is so constructed that when the patron drops his nickel in the slot, the fare is automatically registered. The conductor does not have access to the money until after it has been registered, when he can get it for making change. If anything goes wrong with the registering apparatus, the channel thereto is cut off, and the nickels drop directly into a locked box and continue to do so until the register is set in order again. Another register has a slot in it, the machine resembling a simpler bicycle cyclometer, every passing coin corresponding to a revolution of the wheel. Another innovation is the change making machines. These are stationed at convenient points along the road, so that passengers can secure the proper change before boarding the cars. They have been tested in Canada and found to work with satisfaction.

How to Get Copies of Patents.

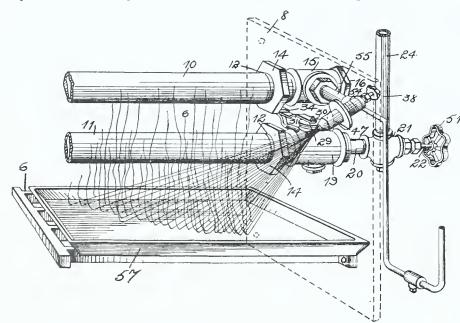
THE INVENTIVE AGE prints each month a list of the patents granted by the Patent Office. This list includes the name of the inventor, the title of the invention and the date of the patent. Anyone can procure through THE INVENTIVE AGE a copy of any patent included in the list. by giving the data and enclosing ten cents in stamps for each copy. There is no better way of keeping yourself informed about the progress of the arts than by scanning the list each month and ordering copies of patents.

CLEVER NEW PATENTS.

HYDROCARBON BURNER.—SAFETY RAZOR.—FAUCET.

Hydrocarbon Burner.

The steam generator by means of which a jet of steam may be directed on the oil at the burner tip for the purpose of atomizing the fuel and effecting perfect combustion of the latter, has been lately patented by Virgil H. Mills and John H. T. Mills, of Hubbard, Texas. One object of the device is to prevent the steam from entering the water supply pipe and checking the flow of fluid, and to permit the escape of steam if the pressure becomes excessive. The device is intended mainly for use on stoves, and the generator is formed of upper and lower pipes 10, 11, with their outer ends threaded and extended through openings in the plate over the opening of the stove, and theirinner ends coupled. Threaded on the outer end of the upper pipe is a T-coupling with one end closed by a plug, recessed to receive the end of the strainer which extends to the pipe and is intended to free the steam from scales and prevent clogging. There is another T-coupling on the lower pipe through which extends the water pipe 20, a flap valve being pivoted on the inner end of this pipe to prevent steam entering. This valve allows a small quantity of water to drip from the water pipe into the pipe 11, where it is converted into steam. Should the pressure become excessive. it will overcome the gravity of water in the water pipe and close the valve. The upper end of the T-coupling 19 is provided with a spring-pressed safety valve. The spring is so adjusted that the pressure exerted by the valve equals the force of the



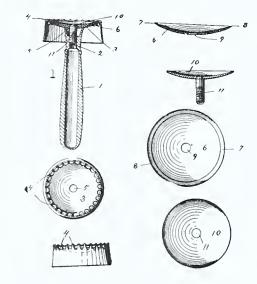
water in pipe 20, so that when too much steam is generated, the flap valve automatically closes to cut off the water, while the valve 29 rises to permit the escape of steam. The burner has a tube arranged concentrically within it, the separating spaces forming chambers, one for steam and the other for oil. The inner end of this tube engages an opening in the plug 38 at the rear of the burner, and the other end has a head spaced from the valve stem to form an oil passage. A nozzle 47 has a conical tip spaced from the cap to form a steam passage. The valve stem has radiating lugs to bear against the head and guide the valve stem wito respect thereto. A hand wheel on the stem controls the discharge of fuel. It will be seen that the oil is deposited on the point of the valve stem, while the steam going through the passage is directed against the oil at this point, atomizing it and effecting thorough combustion. By projecting the point of the head beyond the tip of the nozzle, the back pressure of the steam discharging through the passage is prevented from entering the passage and checking the flow of fuel to the burner tip. In operation oil is placed in the pan 57 and lighted with a match to heat the pipes of the generator. Water is then allowed to flow into the generator, where it will be instantly converted into steam which passes through the strainer into the chamber around the burner. The valve is then fixed to allow the passage of a small quantity of oil to the burner tip, where it meets the steam and is atomized. The device is simple and may be operated by an un skilled person without danger.

Safety Razor.

found on the market. Some of them have a circular blade, but this is usually so arranged that it presents a convex surface to the face, or has a convex cap that tends to force the blade away from the skin and forms a wrong cutting angle. It is well known that the best cut can be obtained from a concave surface, and a device presenting this advantage has been patented by Witmer J. Kendig, of Lan-

caster, Pa. It can also be honed with-Safety razors are growing in popu- out disassembling, a characteristic larity, and a variety are now to be which is not found in other razors and which will be appreciated by the owner. It can also be moved in any direction, thus rendering available a greater cutting edge than in any straight edged razor, as the blade being circular, one half of its cutting edge is in use at the same time.

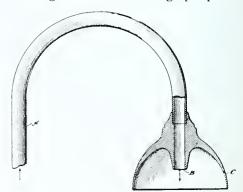
The handle 1, shown in the drawing, is preferably tubular in form so as to be readily cleaned, and is shaped at the upper end to conform to the curve of the lower surface of the guard, and provided with the internal screwthreaded portion 2, for the reception of the cap stud 11. The guard case 3 is formed with the top of concavoconvex form, and its edge is cut away



to form comb teeth, an orifice being provided in the center of the top. The blade 6 is composed of an even thickness of steel, and is concavo-convex in form, except where it is ground to form the cutting edge, and has a central orifice 9. The cap 10 is slightly less than the blade in diameter, and has a screw-threaded stud 11 on its convex side. To assemble the device, the blade 6 is placed with its concave side next to the cap, the latter being on the outside, the stud 11 of the cap extending through the hole in the center of the blade. The guard 3 is next placed upon the stud 11, with its concave surface in contact with the convex surface of the blade, and the handle is screwed on, thus making the whole ready for use. When it is desired to hone the razor, it is placed concave side down upon the hone and given a circular rubbing motion, so that the ground surface is brought into contact with the hone. Thus no special stropping device is required, as is the case with most safety razors. The frame also affords a receptacle in which the lather is collected, and this may be cleaned by holding it under a faucet, as there are no inclosed parts necessitating taking the razor apart to clean.

Faucet.

There are many instances in which it is highly desirable to keep water free from contamination at the point of discharge of a faucet. This is particularly true of water used in the surgical wards of hospitals, and in other institutions where aseptic conditions are to be maintained at the highest attainable degree of perfection. An invention which prevents such contamination, either from contact with the hands of the users, or from the trickling of contaminated liquid down the outside of the spout, is herewith illustrated, it being patented by Henry H. Sherk, of Pasadena, Cal., and assigned to James B. Clow & Sons of Chicago. The spout, nozzle and shield may be integral, but preferably two contiguous parts are formed separately and united; thus a nozzle and shield may be made integral and screwed to the spout A so that they may be taken apart for cleaning and sterilizing purposes.



The surfaces of the bores of the spout and its nozzle are flush. The shield C is made in the shape of a bell, or an umbrella. The nozzle B is located in the center of the shield and extends down from the top thereof, terminating a considerable distance from the bottom. The lower end of the nozzle is smaller than the bottom of the shield, so that the water may not come in contact with the shield. The latter also keeps the hands from touching the water, and prevents extraneous liquid from mingling with it. The outer surface of the nozzle and the inner surface of the shield are joined smoothly together, without crevices in which foreign substances may lodge, and the whole device is made of some material which is germ proof, refractory to water, and adapted to stand a temperature high enough to effect sterilization, such as glass, aluminum, porcelain, brass, etc.

PATENTS

Send Your Business Direct to Washington Saves Time and Insures Better Service.

Trade Marks, Copyrights and Designs.

My office is close to the U.S. Patent Office. Personal attention given-OVER THIRTY YEARS PRACTICE. Book "How to Obtain Patents," etc., sent free. Patents procured through E. G. Siggers receive special notice, without charge, in the-

INVENTIVE AGE

iliustrated Monthly-Twenty-third Year. Terms, \$1.00 a Year.

E. G. SIGGERS,

918 F STREET, N W., WASHINGTON, D. C.

LATEST COURT DECISIONS IN PAT-ENT, COPYRIGHT AND TRADE-MARK CAUSES.

____ COMMERCIAL ACETYLENE CO. v. AUTOLUX CO. et al.

(Circuit Court, E. D. Wisconsin. May 2, 1910. 181 F. R. p. 387.)

1. PATENTS — INFRINGEMENT —ACETYLENE GAS TANKS-CONTRIBUTORY INFRINGE-

The Claude & Hess patent, No. 664,383, for an acetylene gas tank, for use on automobiles, etc., covers as the patented package, not only the steel tank containing acetone, but the internal equipment of a supersaturated solution of acetylene gas, which is an essential part of the patented device, and an unlicensed refilling of such tanks after the gas has been exhausted constitutes an infringement, and one who knowingly aids and abets such refilling is a contributory infringer.

2. Patents — Infringement — Violation OF LICENSE RESTRICTIONS — CONTRIBU-TORY INFRINGEMENT.

It is within the rights of the owner of a patent for an acetylene gas tank charged with gas for use on automobiles, which with normal use requires recharging after having been used a certain number of hours, by a notice attached to such tanks when sold to prohibit their use except when charged by the seller, and any one who with knowledge of such limited license recharges such tanks, which requires the practice of the invention of the patent, is an infringer of the patent, and one who with such knowledge sells an apparatus used and designed for re-charging the same is chargeable as a contributory infringer.

3. PATENTS-INFRINGEMENT.

The fact that the manufacturer of a patented device is unable to supply the demand therefor with promptness, and that users are subjected to inconvenience by reason of the delay, furnishes no legal excuse for in-

DITTGEN v. RACINE PAPER GOODS CO. et ol.

(Circuit Court, E. D. Wisconsin. June 10, 1910. 181 F. R. p. 394.)

1. PATENTS-SUITS RELATING TO INTERFER-ING PATENTS-SCOPE OF INQUIRY.

Under Rev. St. § 4918 (U. S. Comp. St. 1901, p. 3394), authorizing a suit in equity to determine rights under interfering patents, and which authorizes the court to "adjudge and declare either of the patents void in whole or in part," there is a wide range of investigation in such suits covering fraud, negligence, and inadvertence on the part of the Patent Office, and the court has power to determine the original question of patentability, and may declare both patents invalid.

2. PATENTS-PROCEDURE IN PATENT OFFICE -LEGALITY.

Under rule 126 of the Patent Office, which provides that interference proceedings may be suspended where au issue is made against one applicant on the ground that he is barred by the statute from the right to a patent because of prior use for more than two years until such issue has been tried, the action of the Patent Office in ignoring such an issue, which when made becomes the primary and paramount issue, or in referring it for an ex parte hearing, and in issuing the patent without any finding thereon, was unauthor-

3. PATENTS - PATENTABILITY-PRIOR USE

Where the inventor of a cigar pocket for more than two years before applying for a patent therefor made and sold such pockets in the regular course of his business, such articles were in "public use" and "on sale," and defeated his right to a patent under Rev. St. § 4886 (U.S. Comp. St. 1901, p. 3382), although they were not kept by him in stock but were mad up only on orders received; it being the custom of the trade to take such orders by sample.

4. PATENTS—VALIDITY—CIGAR POUCH The Parmenter patent, No. 781,455, and

the Dittgen patent, No. 662,226, each for a cigar pocket, and both covering the same invention, are void for prior public use and sale of the patented article by Parmenter for more than two years prior to either application.

5. PATENTS-PRIOR USE-"ON SALE"-"PUBLIC Use."

A device will be "on sale" and in "public if it is offered for sale, whether any specimen of it is actually sold or not.

PARK & POLLARD CO. v. KELLER-STRASS et al.

(Circuit Court, W. D. Missouri, W. D. June 3, 1910. 181 F. R. p. 431.)

COPYRIGHTS-INFRINGEMENT-INJUNCTION.

Where a publication by defendant contains matter which infringes a copyright of complainant intermingled with other matter which does not, the entire publication may be enjoined, leaving it to defendant to apply for a modification of the injunction after he has eliminiated the objectionable matter.

McDUFFEE et al. v. HESTONVILLE, M. & F. PASS. RY. CO. et al.

(Circuit Court, E. D. Pennsylvania. June 1. PATENTS—SUIT FOR INFRINGEMENT—EF 17, 1910. 181 F R. p. 503.)

1. PATENTS—VALIDITY AND INFRINGEMENT ELECTRICAL DISTRIBUTION SYSTEM FOR

The Schlesinger patent, No. 546,059, for a system of distribution of electricity for electric railways, claim 1, covers a combination which was not anticipated and discloses invention, and which was sufficiently shown in the application and drawings, although not appearing in any one of the original claims prior to their amendment. The character of the invention, also, as a new, meritorious, and highly successful combination in the electric railway art, entitles the claim to a somewhat liberal construction and range of equivalents. Also construed, and held infringed.

2. PATENTS—VALIDITY—ABANDONMENT OF APPLICATION.

The reinstatement of an application for a patent after several years, during which no action had been taken thereon, on a finding by the Patent Office that the delay was unavoidable within the meaning of Rev. St. § 4894 (U.S. Comp. St. 1901, p. 4484), is conclusive on the courts that the application was not abandoned.

3. PATENTS—VALIDITY — ABANDONMENT OF INVENTION.

An abandonment of an invention after the filing of an application for a patent, upon which a patent was subsequently granted, must be established by clear proof showing an intention to abandon, especially where the invention is a meritorious and valuable

4. PATENTS-VALIDITY-EFFECT OF DELAY IN PATENT OFFICE.

A patent cannot be defeated or limited by intervening rights of third persons applying for and receiving patents between the filing of the application and the issuing of such patent, where there was no abandonment of either the application or invention, and no expansion of claims, merely because there was delay in prosecution of the claims, which was satisfactorily explained to the Patent Office.

PEERLESS BRICK MACH. CO. v. MIRACLE PRESSED STONE CO.

(Circuit Court, D. Minnesota, Fourth Division. Sep. 30, 1910. 181 F. R. p. 526.)

1. PATENTS- ACCOUNTING FOR INFRINGE-MENT-EVIDENCE.

A decree holding a patent valid necessarily determines that the invention covered thereby is both new and useful, and, on an accounting for infringement under such decree, evidence to show that the patented feature of the machine is of no utility is in-

2. PATENTS-INFRINGEMENT - PROFITS RE-COVERABLE.

Where the owner of a patent and the maker of an infringing machine were the only manufacturers having machines of the kind in the market, no competing machine being then known, the infringer is account-

able for the entire profits made which must be attributed to the patented feature of the machine.

3. PATENTS—INFRINGEMENT — ACCOUNTING FOR PROFITS.

The testimony of an officer of a defendant corporation on an accounting for profits made from the sale of an infringing machine that some of the accounts for machines sold were not collectible, was not sufficient in itself to require the deduction of the profits on account of such sales; there being no testimony of attempts to collect nor offer to assign any part of the accounts to complainant.

4. PATENTS—INFRINGEMENT—DAMAGES RE-

Where, on an accounting for profits made by defendant from the sale of an infringing machine, the profits made on certain sales made in direct competition with complainant were allowed, complainant was not entitled to also recover as damages the profits it would have made from the same sales on its own machines.

UNDERWOOD TYPEWRITER CO. v. FOX TYPEWRITER CO.

(Circuit Court, W. D. Michigan, S. D.

181 F. R. p. 530.)

FECT OF PRIOR ADJUDICATIONS.

Where the questions involved in determining the validity of a patent are fairly doubtful, the decision of one Circuit Court of Appeals sustaining the patent should be followed in another circuit if the record is substantially the same, although a court would have no right to abdicate its own judgment.

2. PATENTS-VALIDITY AND INFRINGEMENT-TABULATING ATTACHMENT FOR TYPE-

The Gathright patent, No. 436,916, for a tabulating attachment for typewriting machines, was not anticipated, and, while not for a pioneer invention, covers a primary improvement, and the claims are entitled to a liberal construction and a fairly broad range of equivalents. Claims 4 and 5 also hald infringed.

3. PATENTS-CONSTRUCTION AND INFRINGE-MENT-TABULATING ATTACHMENT FOR TYPEWRITERS.

The Gathright patent, No. 452,268, for a tabulating attachment for typewriting machines, which covers specific improvements on the patentee's prior patent No. 436,916, construed, and held not infringed

BERYLE v. SAN FRANCISCO CORNICE COMPANY.

(Circuit Court, N. D. California, July 22, 1910. 181 F. R. p. 692.)

1. PATENTS-INVENTION.

A change produced in a process or combination is not to be rejected as obvious or wanting in inventive thought because it tends to simplicity of action, but the simplitying of a device or process may in itself amount to invention.

2 PATENTS—INFRINGEMENT—IMPROVEMENT PATENTS-DOCTRINE OF EQUIVALENTS.

Secondary or improvement patents, equally with those of a primary character, are entitled to be protected against infringement from equivalents to the full extent that a fair and reasonable construction of their claims will warrant.

3. PATENTS--INVENTION-NEW COMBINATION OF OLD ELEMENTS.

If a new combination and arrangement of ficial result never attained before, it is evidence of invention, and such result need not be new and useful in a primary sense, but not approximately so.

4. PATENTS — VALIDITY AND INFRINGEMENT — PROCESS OF PUTTING METAL FACING ON

The Beryle patent, No. 887,995, for a method of casing wooden moldings, etc., while for an improvement on the prior art, was not anticipated, and discloses invention, and is of such merit as to entitle it to a construction sufficiently broad to give it protection against a method using palpable equivalents. Also, held infringed.

WARREN WEBSTER & CO. v. C. A. DUNHAM CO.

(Circuit Court of Appeals, Eighth Circuit. Sep. 19, 1910. 181 F. R. p. 836.)

1. PATENTS-NEW USE-WHEN PATENTABLE.

The application of an old machine or combination to a new use is not in itself invention, or the subject of a patent.

If the relations between the two uses be

remote, and if the use of the old device produce a new and beneficial result, the application to the new use may involve the exercise of the inventive faculty and be pat-

But it is only when the new use is so recondite or so remote from that to which the old device has been applied, or for which it was evidently conceived, that its application to the new use would not readily occur to the trained mind of the ordinary mechanic skilled in the art, seeking to devise means to accomplish the desired function, and its conception rises to the dignity of invention.

2. PATENTS—LETTERS-PATENT No. 454,964 TO HALL, JUNE 30, 1901, FOR DOUBLE USE AND VOID.

The combination of thermostatic valves with the return pipes or the connections between the return pipes and the radiators of suction or vacuum systems of steam heating, such as are disclosed in letters-patent No. 256,089, to Williams, issued April 4, 1882, did not rise to the dignity of an invention, in view of the combination of such valves with the return pipes of pressure steam-heating systems shown in the letterspatent No. 113,434, to John J. Jordan, issued April 4, 1871. And letters-patent No. 454,-964, to W. E. Hall, issued June 30, 1891, was for a double use, and the patent for it is

ASHLEY v. SAMUEL C. TATUM CO.

(Circuit Court, S. D. New York. Aug. 12,

1910. 181 F. R. p. 840.)

PATENTS - VALIDITY AND INFRINGEMENT-DE-SIGN FOR INKSTAND.

The Ashley design patent, No. 37,504, for a design for an inkstand, consisting of a low square base surmounted by a low dome of a diameter somewhat less than the side of the base, wholly devoid of ornamentation, discloses a meritorious and novel design, depending entirely upon its simplicity and the proportions of the parts for its artistic merit; also, held infringed by the design of Hilles patent, No. 40,125, which contains every element of the Ashley design, with the addition only of sufficient ornamentation to make a colorable differentiation.

KINGS COUNTY RAISIN & FRUIT CO. et al. v. UNITED STATES CONSOL. SEED-ED RAISIN CO.

(Circuit Court of Appeals, Ninth Circuit. Oct. 3, 1910. 182 F. R. p. 59.)

1. PATENTS-SUIT FOR INFRINGEMENT-PRE-LIMINARY INJUNCTION—DISCRETION OF

The granting or refusing of a preliminary injuncion in a suit for infringement of a patent ordinarily rests in the sound discretion of the trial court, and a review of its action by the appellate conrt is limited to the inquiry whether there was an abuse of discretion in granting the injunction.

2. Patents — Anticipation — Abandoned EXPERIMENTS-PAPER PATENT.

A patent for the first successful machine to accomplish a new and useful result is not anticipated nor limited by a mere paper patent granted many years before, although it disclosed the theory of the successful machine; such a patent having no place in the prior art.

3. PATENTS — INFRINGEMENT — COLORABLE CHANGES IN MECHANISM.

Infringement is not avoided by dividing an integral element of the patented machine into two or more distinct parts, so long as the function and operation remain sub-stantially the same

4. PATENTS - CONSTRUCTION - LIMITATION BY Specific Description.

It does not necessarily follow, from the fact that the claim of a patent describes a specific form of construction of a machine or part, that the inventor is limited to that form; but it depends upon his expressed intention and the scope of his actual invention.

5. PATENTS - INFRINGEMENT - FRUIT SEEDING MACHINE.

The Petit patent, No 619,693, for a fruit seeding machine, held infringed, on review of an order granting a preliminary injunc-

MECHANICAL INVENTIONS AND DESIGNS

Pahents for which have been procured through the Patent Soliciting Office of E. G. Siggers, Patent Lawyer, Washington, D. C.

Richard Keegan, Bishops Mills, Ontario, Canada. Nut Lock.—The invention provides a nut lock adapted to be applied to the ordinary bolt without injury to or alteration of the same, and capable of effectually preventing the nut from accidentally unscrewing. The invention includes a hase, and a nut having an inclined perforation formed partly in the base and partly in the nut, and having a continuous diameter throughout its entire length, the perforation in the nut beginning at one side and extending through its base, thereby intersecting the corner of the nut, the perforation in the base beginning at a point beyond the nut and extending inwardly in alinement with the perforation of the nut to a point near the bolt, and having its greatest depth in the nut at its outer end and in the base at the inner end, and a cylindrical pin arranged within the perforation and extending beyond the nut, and adapted to be clamped by and hetween the adjacent side edges of the perforation between the nut and the base to prevent the turning of said nut.

William W. Katterjohn, Henderson, Ky. Flying Top or Toy.—This invention has for its object to provide a flying top, the construction of which is simple and compact, adapted to be easily held in the hand of the operator and equipped with a flying device, which will fly in the direction in which it is pointed. The toy comprises a flying device provided with propelling blades set at an angle, a casing forming a handle, a spring actuated shaft mounted in the casing and provided with a projecting member arranged exteriorly of one end of the casing and constituting a handle for winding the shaft, and engaging the flying device for actuating the same, and a lever projecting from the casing and having an interiorly arranged arm forming a pawl for engaging the shaft, the outer end of said arm constituting a trigger for operating the device.

Henry H. Urquhart, Louisville, Ky. Two patents. Assignor of the first patent to The Urquhart Brake Shoe Co., Paducah, Ky.—The first patent has for its object to improve the construction of locomotive brake shoes, and to provide one adapted for use at either the right or left hand side of the locomotive, thus being made interchangeable; and also to provide a shoe having a re-enforcing steel frame embedded in the same to impart strength thereto. The shoe comprises a body having a recess in its rear face, and a re-enforcing frame embedded in the body at the recess and provided with side and end arms extending through the side and end walls of the recess, the frame being provided with slots which receive portions of the metal of the body, and a lug projecting from the frame for securing the brake shoe to a brake head.

The second patent is an improvement on the first, and has for its object to provide a brake shoe with reenforcing means, capable in the event of the breaking or cracking of the shoe of retaining the parts thereof in place until the broken shoe can he replaced. Another object is to provide a brake shoe having metallic inserts of material harder than the brake shoe, which are embedded in the braking face thereof to prevent the rapid wear of the shoe.

Otto A. Hunger and Frederick W. Hunger, La Grange, Texas. Lace Cabinet.—This invention has for one of its objects to provide a revolving cabinet, designed particularly for the display and sale of laces, and capable of displaying its entire contents and of enabling a number of persons to inspect the lace simultaneously. Another object is to provide a cabinet equipped with winding spools, thus enabling the lace to be readily drawn from it, the spools being equipped with a measure wound on the spool with the lace, and arranged to indicate the amount of lace drawn out of the cabinet and the quantity remaining on the spool. Another object is to provide means whereby the lace may be readily rewound on the spool and capable of yieldingly retarding the movement of the spool, whereby the outward movement of the lace will be stopped as soon as the outward pull on the material ceases.

John S. Watterson, Bristol, Tenn. Mechanical Movement. Assignor of one-fourth to W. D. Lyon, Bluff City, Tenn.: one-eighth each to A. K. Hanklerood, Mountain City, Tenn., Bertie K. Vance and Benjamin F. Vance, Bristol Tenn.—This invention has for its object to provide a mechanism designed to be used in connection with steam and other kinds of engines. and adapted to enable continuous rotary motion to be transmitted to a driven member from a reciprocating driving member or piston without employing crank mechanism, thereby enabling the full power of the actuating force to be transmitted to the driven member during each stroke of the reciprocating driving member or piston. The device includes a reciprocatory driving member, a driven member including an endless belt having opposite stretches, spaced belt-engaging pawls located between the stretches of the endless belt, each pawl co-operating with one of the stretches and pivoted at an intermediate point and shiftable to present either end to the adjacent stretch. whereby the pawls may be arranged for driving the belt in either direction.

Frederick D. Green, Corinth, Miss. Four patents. Assignor of one-half to Wm. T. Adams, Corinth, Miss.—The invention of the first patent has for its object to provide a variable speed friction drive gear, capable of being easily changed to different speeds and of being reversed when desired. The gearing consists of a driven shaft, outwardly tapered cones loosely journaled on the shaft, a carrier fixed to the shaft between the cones, planetary gearing journaled upon the carrier and engaging the adjacent end portions of the cones, a driving shaft, inwardly tapering cones fixed to the driving shaft, gear wheels interposed between the inwardly tapering and outwardly tapering cones and engaging the same, and means for effecting the movement of the gear wheels toward and from each other.

The object of the invention of the second patent is to provide a wood working machine, adapted for cutting moldings and the like, wherein a plurality of rapidly revolving cutters are utilized, together with means for independently controlling the operation of each cutter. A molding cutter is provided to cut irregular forms, and which operates with the grain of the wood. The work to be operated on is clamped to a reciprocatory carrier, which is adapted to carry the wood between the rapidly revolving cutters. thus dispensing with the necessity of the workman pushing the block beteen the cutters and risking the danger of being injured by the cutters.

The invention of the third patent is an improvement on the second, and has for one of its objects to provide a wood working machine with novel driving means for the cutters, whereby frictional resistance is greatly reduced and the cutters can be driven at a very high rate of speed and with effective force. Another object is to provide means for securing the cutters in an inoperative position during the passage of the work holding means in one direction past the same, and for releasing the cutters to permit them to operate on the work when the holder moves in an opposite direction.

The invention of the fourth patent is an improvement on the second and third patents, in that it provides a rotary work carrier in place of a reciprocatory one, as is used in each of the previous patents. One of the objects of this invention is to provide a machine of this type which is continuous in operation, and one in which work of various shapes can be operated upon, it being particularly adapted for trimming felloes of wheels of different diameters without the necessity of altering the template or cutter controling means.

Henry Julich, Mount Hope, Wisc. Wrench.-The invention of this patent is particularly adapted for plumbers' use and has for of its objects to provide a pipe wrench, adapted to be quickly adjusted to accommodate pipes of various sizes, and designed to tightly grip the pipe when in use. The wrench comprises a substantially hooked-shaped jaw consisting of a single piece of flat metal, doubled at the center to provide two spaced sides, and bent outwardly at a point intermediate of the ends of the sides to form two spaced bearing portions to receive a pipe or rod and a relatively wide inner portion, a transverse bar or nut having a threaded opening and extending across the space between the sides of the jaw at the inner end thereof and pivoted to the same, and a handle or lever provided with an intermediate threaded portion to engage the nut and having its outer end enlarged and bifurcated to form two spaced engaging heads which are located substantially in the same plane as and co-operate with the sides of the outer engaging portion of the jaw in clamping about the pipe or rod.

Joseph Wheatley, Harlock, Ont., Canada. Combined Hay and Stock Rack.—The object of this patent is to provide a hay rack equipped with a hay loader, which is adapted when the rear half of the load has been placed on the rack, to be readily operated to transfer the partial load to the front portion of the hay rack so that the rest of the hay may also be placed on the rack at the rear thereof. The invention comprises a wagon body having a hay rack including hinged sides extending the entire length of the wagon body, and a carriage removable from the body to permit the hay rack to be swung so as to form a stock rack, said carriage being provided with an upright portion, a windlass mounted on the upright portion. transverse guide rolls arranged on the upright portion, and a rope wound around the windlass and extending from the opposite sides thereof to the guide rolls and provided with loops adapted to be lengthened and shortened by the rotation of the windlass to move the carriage backwardly and forwardly along the body.

Perry J. Garrison, Mt. Vernon, Ill. Itailway Car Jack.—This invention relates to a jack adapted to be adjusted to a car wheel and its bearing box for lifting the latter when it is desired to remove the bearing brasses or to cool the bearing. It comprises wheelgripping jaw sections pivotally connected, a lifting screw journaled in one of the sections, a yoke threaded on the screw and movable back and forth thereon, and a flexible bearing box engaging element in the form of a chain connected with the said member to lift the box by the screw.

Samuel J. McClung, Fayette, W. Va. Garment Supporter.—The object of this device is to provide a means adapted to he attached to the waistband of a pair of trousers for supporting the drawers therefrom, and which are adapted to be concealed by the suspender ends or by a helt when the latter is worn. The device straddles the waist band of the trousers and comprises a double book designed to be arranged interiorly of the waist band for supporting a pair of drawers, the hook being composed of two hook shaped sides having terminal eyes, and a button receiving loop adapted to be arranged exteriorly of the waist band and having terminal eyes linked into the eyes of the hook to form hinge connections, said loop being provided with a button engaging portion.

Arthur S. Hughes, Mansfield, Ohio. Display Rack.—The invention of this patent has for its object to provide a display rack, designed to be readily adjusted or connected for different uses, there being a locking means for yieldingly holding the device so that the racks thereof can be swung around to display the goods at the back as well as at the front of the device. It comprises an upright shaft, an adjustable clothes rack fixed thereon, a notched member fixed on the shaft. and a spring-pressed locking device adapted to engage in any notch of the member to yieldingly hold the shaft in different positions.

Alexander McCombie, Grass Valley, Cal. Two patents.—The invention of the first patent relates to feeders for stamp mills, and has for its object to provide a structure in which a feed screw is employed that will properly feed the material either in a wet or dry state, and will also pass small pieces of quartz, which heretofore have occasioned great trouble by clogging the feed mechanism. To this end there is provided a feeding device adapted to be secured to the uprights of the mill, and a driving means, including a clutch, between the driving belt and the screen, to vary the speed of the feed screw and to obviate all lost motion between the two members.

One of the objects of the invention of the second patent is to provide a fruit-picking step ladder made up of a plurality of step ladders adjustable in unison and equipped with adjustable base members, adapted to conform to irregularities of the ground, and capable of rigidly supporting the ladder in a vertical position and of positively holding it either in soft or hard ground. Another object is to provide a carrier for enabling the picked fruit to be readily lowered and automatically dumped onto the ground, or into a receptacle, without necessitating the picker descending from the upper portion of the ladder, whereby the operator may remain in such position until he has gathered all the fruit within his reach.

Lester Sturm, Vandalia, Ill. Hog Breeding Crate.-The invention of this patent has for its main object to provide a hog breeding crate, capable of a variety of adjustments both in height and length to facilitate breeding between relatively large and small animals. The invention comprises a crate including a vertically adjustable platform, and a vertically adjustable tread board, means connected to the platform and tread board for simultaneously or independently adjusting the platform and tread board, a head board adjustable longitudinally of the crate, a straddle bar hinged at one end and provided at the other end with arms forming rests, and adjusting means connected with the arms of the straddle bar to regulate the height of the same.



Advertisements inserted in this column for 10 cents a line (about 7 words) each insertion. Every new subscriber sending \$1.00 to THE INVENTIVE AGE will be entitled to the AGE one year and to five lines three times FREE. Additional lines or insertions at regular rates.

FOR SALE-To highest bidder. Oscillating Water Motor. For further particulars write. August Anderson, Ponderay, Idaho.

FOR SALE-U. S. Patent, No. 989,008, dated April 11, 1911. Wind Mill. Will sell for cash to the highest bidder. Address, Alfred J. Shirley, Rothsay, Minn.

FOR SALE—Patent No. 989,012. Portable Out Door Sleeping Apartment. Screened Bed and Tent Combined. Insect and rain proof. California reserved for one year. Address, Mrs. Jennie Hoyt, Santa Paula, Cal.

FOR SALE—Patent No. 980,704. Device for attaching holdback straps to vehicle thills. Will unhitch themselves when you forget to do it. Correspond with Dr. T. E. Gallup. Santa Clara, California.

FOR SALE or exchange — Patent on combined track brace and nut lock. Will exchange good real estate or automobile. Any reasonable offer considered. Address. C. Maunders, Jackson, Minn.

For Sale—Patent No. 992,862. Onion Harvester. Machine is propelled by a gasoline engine. Cost of building is small. Easy to operate. The cleaned onions are delivered in the crates. Address. T. De Young. Jr. South Holland, Illinois.

FOR SALE-Several good patents. Direct from owners. No commission. Address, Advertisers Co-operative Association, Chicago, Ill. sep

FOR SALE—Patent No. 986,295. Vertical Upsetting Press. Would sell outright, or dispose of same on a royalty basis. For full particulars, write Justus Johnson, 413 Goepp Street, Bethlehem, Pa. sep

FOR SALE-NO. No. 970,940. Derrick and Hay Fork. This hay fork and derrick will unload hay from wagon to the stack, or to hay mow in barn. It will also load the hay out of the stack onto the wagon. Can be used successfully in conveying wheat that has been cut with a header, from stack to the machine when thrashing. Address, John A. Miller, Harding, S. Dakota. sep

For Sale — Aquaplane Patent No. 989,604, dated April 18, 1911. Will propel boats 60 miles per hour. Address, S. M. Howard, Gettysburg, South Dakota.

FOR SALE-Patent No. 986,221. Safety cranking device for automobiles. Prevents crank from injuring man cranking machine. Would like to hear from parties interested. Address, H. W. Saeger, Battle Creek, Iowa.

Resilient steel tire for automobiles or other vehicles. Best spring steel tire ever put on the market. Canadian patent pending. Address, James S. Draper, Texarkana, Ark.

For Sale-Patent No. 984,186, dated Feb. 14, 1911. Rim for automobile tires. My new rim dispenses with all tools. Tire can be changed without a tool, easily and quickly. Address, G. H. Bogenhagen, Beemer, Nebr.

FOR SALE—Patent No. 974.690, dated Nov. 1. 1910. Miner's Lamp. Has protector or shield encircling the spout. Possesses many points of advantage over the ordinary lamp. Invented by a practical miner. Address, Domittick Miglio, 4082 Elm St., Calumet, Mich. aug

FOR SALE — Patent on Self-Feeding Potato Planting Sack. Price \$200. Drops the potatoes directly into the planter from the sack. If interested write me for copy of patent. A. C. Simonis, R. F. D. No. 1. Box 78. Amherst Junction, Wisc.

FOR SALE-A wonder at last. An extension single and double iron bedstead, also folding springs and extension slats. Patent No. 985,355. Will sell reasonably. For particulars address. S. R. Lockhart, Buna, Texas.

HOR SALE—Patent No. 980,238, For outright sale. Little Daisy Fan Attachment for Dental Engine. It is so simple in construction that it was in operation less than one hour, after first thought of. It is perfect and has no competitor. Address, Dr. J. S. Frisbie, D. D. S., Rotan, Texas.

FOR SALE-U. S. Patent No. 080,768, dated Jan. 3, 1911. Oil Can Pouring Spout. Will sell for eash only to the highest bidder, Address, Peter Faure, Porterville, California.

FOR SALE—Patent No. 981.806, patented Jan. 17, 1911. The very latest improvement in hose coupling. Can be coupled five times quicker than the old one. Will sell my rights reasonably. For particulars address. S. R. Lockhart. Buna. Texas.

FOR SALE — Patent No. 980,193. Drawer Handle. Non-rotatable. Adjusted to any position. Counter-sunk screw inside. Name card attachment. Simple and inexpensive. Address, Sawwa H. Brenia, P. O. Box 164, Olyphant, Pa. ang

POR SALE-Patent No. 988,413, for Non-Refillable Bottle. Address, James Veno, General Delivery, Vancouver, B. C., Canada.

POR SALE—Patent No. 945,812, dated Jan. 11. 1910. Cheapest, simplest and most efficient hand-operated sanitary cow-milking machine, Good proposition, for sale or on royalty. Address, R. D. Roth, Gettysburg, Pa. aug

For Sale - Patent No. 887,552. Improved Tongs. Two ways of using them. Can be made to bold large or small articles. Address, James Veno, Vancouver, B. C., Canada. oct

For SALE—Patent No. 986,460. Animal Trap. Catches all kinds of small animals. Will sell to highest cash bidder. Address. H. J. Hagge. R. F. D. No. 2, Ogden. Iowa. sep

FOR SALE-Patent No. 983.952, dated Feb. 14, 1911. Machine for removing weeds and performing other cultivating operations. Address. Gus Thomas, Lind, Washington.

FOR SALE—Patent No. 966.641. Corn Husker. Can be worn on either hand. Very comfortable to the user. Can remove ears of corn in any position Address, Rousseau H. Atkinson, Goldengate, III.

For Sale-U.S. Patent No. 975,537; also Canadian Patent. Animal trap that kills the animal. Best Marten and Mink trap out. Light to pack. Made of wire. Investigate. Address, John Kubes, Broadview, Mont.

For Sale-U. S. Patent No. 974.411; Canadian Patent No. 129,289, Combination Rail Brace and Nut Lock. Prevents low joints, rails spreading, rails turning laterally. Δ11 nuts locked against turning movements, avoiding expense of track walkers. Can be used at either joints or intermediate points to best advantage, thus avoiding serious wrecks. The best combination brace yet invented. Will consider any reasonable offer, either outright or royalty and part cash. Address, C. Maunders, Jackson, Minn. aug

WANTED.

WANTED—The detailed history of persons, as to age, location, hopes, disappointments, success and failures in patents. Object mutual exchange of testimonies. Nothing to buy or sell. Address, Joseph A. Shires, 1921 Sherman Street, Denver, Colo.

ANTED a Company in the U. S. to manufacture my saw-fitting device, patent No. 972,789, dated Oct, 10, 1910. Also a company in Canada to manufacture same device, Canadian Patent No. 124,345, dated March 8, 1910. I will sell either or both of said patents. Address. C. R. Pierce, Rainier, Washington.

Wanted-Agency propositions. What have you to sell? Address, Ernest Morse, Luverne, Minn.

WANTED—Two or three persons with some capital to correspond with a patent owner of a new meritorious article. Practice on model very satisfactory. Will not sell patent but will join in company. Address, F. D. F. Box 28, Waterbury, Conn.

WANTED—Not for sale but want a company to manufacture my manure loader on royalty, Patent No. 918,605. Address, Lars C. Peterson, Osage City, Kansas.

WANTED-Partners for foreign patents on whip socket lock, for share in patents. U. S. patent allowed. Key remains in lock when whip is loose. One-half turn of key locks whip. When whip is locked key is removed. The harder the pull the tighter the grip. For particulars address, Clarence S. Skinner, Payne, Ohio. aug

WANTED-Four 4 men to loan me \$100 each, for four years, at 6 per cent to help me to push four 4 good paying toy inventions, for which I will return to each of them their loan, and I will give also to each loaner 10 per cent of all the income from sale of said patent inventions in whatever way I may dispose of said patents. Here is your chance. Who will accept. Address, E. W. Barton, No. 35 Carroll St., Binghamton, N. Y. aug

W ANTED—A company to manufacture a bag holder made of sheet iron. U. S. Patent No. 968.349, dated August 23, 1910. Will have patent for Canada in a short time. Address, Louis Hanson, Cottonwood, Idaho.

Electrical Review and Western Electrician

Published weekly from the center of the industry, this publisation is in the best possible geographical position to gather and present the most important and interesting news of the entire electrical industry.

SUBSCRIPTION PRICE

U. S. \$3.00 per year, Canada \$4,00 per year, Foreign Countries \$6.00 per year. Sample Copy Free

It is seen and read by practically every buyer of electrical material in this country and abroad. Advertising rates on application.

ELECTRICAL REVIEW PUBLISHING CO., 507 Marquette Bldg., CHICAGO.

A NEW BOOK FOR INVENTORS Patents and How to Make Money out of Them,

By W. B. Hutchinson.

This is the only book published, giving a detailed and full account, from the author's actual experience, of just what steps are necessary from the time the invention is conceived, to the time it is sold, with a clear and concise resume of the law and practice, legally and commercially, of trade-marks and copyrights. It also tells accurately How and What to invent, How to sell Inventions, Place them on the Market, Interest Capital in them, and to successfully Promote a Stock Company. It also contains an index of forms worth double the price of the book to any one interested.

ELEGANTLY CLOTH BOUND

GOLD STAMPED.

\$1.00 Postpaid

Sent with one subscription to AGE for \$1.50 Or will sell separately.

The Inventive Age Pub. Co., 918 F St., N. W. WASHINGTON D. C.



A VALUABLE OFFER TO INVENTORS.

A Complete Outfit of Printed Matter for \$20.

- 1. A zinc etching of your invention for use in printing letterheads, envelopes, circulars, etc.
- 2. One thousand printed circulars.
- 3. Five hundred envelopes with your name and address printed in the corner.
- 4. Five hundred letterheads with a cut of your invention, and your name and address neatly printed thereon.
 - 5. A list of manufacturers in the special line of your invention.
- 6. A form letter to be followed in conducting your correspondence with manufacturers and others.
- 7. Four dozen deeds useful in selling state, county, town or shoprights.

 Address:—

INVENTIVE AGE PUBLISHING CO. Dept. O. WASHINGTON, D. C.

ATTENTION INVENTORS!

LISTS OF MANUFACTURERS FURNISHED.

We have increased our facilities for furnishing lists of manufacturers, and now cover every line of industry. The names are obtained from well known directories.

Our charge for each list is one dollar.

In ordering, please state specifically the class of manufacturers desired. Address: Inventive Age Pub. Co., Dept. M. 918 F. St., Washington, D. C.

Every subscriber when sending \$1.00 is entitled to a free advertisement, not exceeding five lines, of any patent in which he may be interested. The ad, will be inserted three times.

THE INVENTIVE AGE PUBLISHING CO., Washington, D. C.
I herewith enclose \$1.00 for one year's subscription to
"THE INVENTIVE AGE."
I also enclose ad. for insertion in the (Patents for Sale*) (Want*) column of your paper.
NAME
P. O
STATE

Please indicate in which column you want the ad, inserted.

N. B.—Remit in the way most convenient.

""Inventive Age

Established 1889.

Published monthly by

THE INVENTIVE AGE PUBLISHING CO., National Union Building, 918 F Street, N. W.,

 \mathbb{W} as \mathbb{H} ington, D. C.

THE INVENTIVE AGE is sent, postage prepaid. to any address in the United States, Canada Mexico, Hawaii, and Porto Rico, for ONE DOLLAR a year; to any other country, postage prepaid, ONE DOLLAR AND TWENTY-FIVE CENTS.

Correspondence with inventors, mechanics, patentees, and manufacturers, is invited. The columns of this journal are open for the discussion of such subjects as are of general interest to its

Technical matter is particularly desired. We want practical information from practical men. THE INVENTIVE AGE is independent.

Special facilities for furnishing cuts of any pat-ented device together with descriptive article. Business specials 10 cents a line each insertion: 7 words to the line. No advertisement less than 25

Address all communications to

THE INVENTIVE AGE PUBLISHING COMPANY,

WASHINGTON, D. C. Entered at the Post-office as 2nd class matter.

WASHINGTON, D. C., AUGUST 1, 1911.

SOME FACTS ABOUT ATTORNEYS.

Any one who will take the time and trouble to investigate, will learn some curious facts about attorneys who practice before the Patent Office. It is a well known fact that the best attorneys do not advertise. They do not have to. Somehow, or in some way, men find out where they are and who they are. By reason of their skill and learning they are much sought after, and they are not obliged to advertise their qualifications. The paths leading to their office doors are well worn by the tread of their many clients. They are the attorneys for railroads, and manufacturing concerns. Indeed, the patent business of many of the manufacturing concerns is considered so important that they have patent departments of their own, in which either an attorney, or a corps of attorneys, conducts their patent work. For instance, the Steel Corporation has its corps of attorneys. The General Electric Co. Schenectady, N. Y., has a host of attorneys, several of whom are detailed in Washington. Many of the attorneys are former examiners of the Patent Office. Naturally, when they go out of the Patent Office and accept a position as attorney for a manufacturing concern, they are possesed of all the secret information which the examiners have concerning the condition and contents of every pending applieation. It was thought that the in- to such a low plane, and compelled crease in the salaries of examiners the better class of practitioner to look would prevent their resignation, but we have not noticed any appreciable diminution in this respect. The demand for Patent Office examiners by the manufacturing concerns is always present. We are informed that some of the brightest and best men in the electrical division have left to accept employment in the patent departments of the different electrical companies. Because of this fact, we have some-

times noticed a disposition on the part of certain Patent Office examiners to favor the corporations as against the poor inventor. The reason is perfectly obvious. An assistant examiner may be getting \$1400 a year, and to curry favor with some big corporation he shows it favors, hoping to attract its attention and thus get a position outside the Patent

There is another class of attorneys which is quite different. They are the men who have entered patent business for commercial purposes only. Here is one man who was a real estate agent. Not making enough in the business of selling land and renting houses, he decided he would go into the patent business. Having no knowledge of his own, he hires men who have skill in the business, and he proceeds to advertise his qualifications as an attorney and draws to himself clients.

Here is another man who was a draftsman. He has no knowledge of writing specifications, he is not an attorney at law, and is in no way skilled to act as a patent attorney himself. He has a little money, so he enters the patent business, hires attorneys who are skilled, and by clever advertising, and by atter disregard of the ethics of the profession, succeeds in building up a business of considerable magnitude. Other instances might be cited, but we have said enough to illustrate our point.

From our observation, it would seem that the less knowledge a man possesses of patent law, the more success, from a financial point of view, he is likely to attain. In no other branch of the law is such a condition possible. No attorney can make a success before the courts merely by his skill in advertising. The courts always frown upon such practitioners, and they usually get just what they deserve, to wit: a bad reputation. They have no standing before the courts, and are constantly in trouble. In the patent business, however, whether a man's reputation is good, bad or indifferent, if he has money to advertise and is clever in getting up his literature, and is careless in making his promises, and even more careless in fulfilling them, you can count on his being able in the years to come to own his own office building. This statement is not overdrawn. Let any one examine the patents taken out by attorneys who advertise the most, let any one investigate their records. and he will find the facts to be precisely as stated. It is an unfortunate phase of patent soliciting which has brought it down upon the designation of patent attorney as next door to that of shyster. Whether it will ever be possible to rescue the profession of a patent attorney from the degradation to which it has been consigned by these men, is a prophecy which we do not venture to make. We are inclined to be pessimistic, however, for we see no present signs of improve-

PERJURY UNDER THE PATENT LAWS.

In our issue of the AGE for November 1909, we discussed the decision of a Judge of the United States District Court for the District of Oregon, bearing upon the taking of a false oath in an application for patent. The judge held that the taking of a false oath in an application for patent made the affiant guilty of perjury under Section 5392 of the Revised Statutes, which provides:-

"Every person who, in any case in which a law of the United States authorizes an oath to be administered, swears that he will testify, declare, depose, or certify truly, or that any writing, testimony, declaration, deposition or certificate by him subscribed is true, wilfully and contrary to such oath states or subscribes any material matter which he does not believe to be true, is guilty of perjury, and shall be punished in a prescribed

In the case under consideration, an inventor by the name of Larsen, having pending in the Patent Office an application for a patent for an improvement in a one-piece harness buckle, entered into negotiations with a party by the name of Patterson. the defendant in the perjury proceedings, which culminated in an assignment by Larsen, the inventor, to Patterson, and two other parties, Vanemon and Parrish, of all his rights in and to the application and the invention. The Larsen application was rejected by the Patent Office. Later an application was filed containing as an additional feature a projecting lip which was designed as an improvement on the buckle of Larsen. In filing the application, a joint application was made in the names of Vanemon, Patterson and Parrish, which application was subsequently abandoned. There was some conflict in the testimony as to who suggested the projecting lip. Vanemon claimed that the suggestion of the lip was made by him, while Patterson, the defendant in the perjury proceedings, testified that he was the originator of the suggestion. The joint application of Vanemon, Patterson and Parrish having been abandoned, Patterson made an application for patent on the buckle in his own name, claiming that he was the original, first and sole inventor of the same. Patterson was charged with having committed perjury for claiming the invention as his own. In the trial before the lower court, the Judge said:-

"It will be seen that the word 'sole' has a material bearing both on the theory upon which the case was tried, and on that upon which it was put to the jury by the instruction of the court. If perjury cannot be predicted upon the use of that word in connection with the words 'original' and 'first,' the oath having been made in a proceeding to obtain a patent, then a new trial should be granted; otherwise, it must be conceded that the judgment is proper."

The Court of Appeals of the Ninth

Circuit referred to section 4892 of the Revised Statutes, and pointed out that the Statute prescribes that an applicant for a patent "shall make oath that he does verily believe himself to be the original and first inventor or discoverer, etc.," but does not require that he should swear that he was the original, first and sole inventor of such improvement. The United States Patent Office has always required that an applicant should swear that he is the original, first and sole inventor, or if two applicants, that they are the original, first and joint inventors. The Court of Appeals for the Ninth Circuit in commenting upon this, said:-

"The contention is made in support of the judgment that inasmuch as the statute in section 4886 provides that the applicant for such a patent 'may upon payment of the fees required by law and other due proceedings had, obtain a patent' etc., the department of the government charged with the duty of executing the law could legally prescribe by rule that in the affidavit required by section 4892 of the statute to be made by the applicant, he shall also swear whether he is the sole or joint inventor of the invention claimed in his application. Granted that such a requirement can be legally made by rule of the department in order to determine whether or not the applicant was alone entitled to the patent applied for, or only in conjunction with some one else, it by no means follows that the department can by any rule or regulation add any word or words to the statutory oath, making that a crime which Congress did not make such. The law is thorough ly well settled that crimes and such matters are such only as the statutes define and declare.

"In the instance at hand, the statute has defined the matters the wilful false swearing to which is made to constitute the crime of perjury. Whether or not an applicant for patent is the 'sole' inventor of the thing claimed is not among the elements of the crime denounced by the statute. Therefore, false swearing in respect to that matter cannot be a crime."

As a result of this reasoning, the Court of Appeals for the Ninth Circuit reversed the decision of the judge of the District Court of the United States for the District of Oregon, and remanded the case to the court below for a new trial. Of course, it practically amounted to a decree that Charles A. Patterson is guiltless of the crime of perjury.

This decision means that while false swearing to inventorship in an application for patent is perjury, an oath which alleges that the party is a sole or joint inventor does not come within section 5392 of the Revised Statutes, and is not perjury when falsely taken. In other words, a man may swear that he is a sole inventor when he is a joint inventor, or a joint. inventor when he is a sole inventor, and not commit the crime of perjury.

Birds Fear Aeroplanes.

Aviators have observed the terror of the aeroplane displayed by birds and such animals as rabbits. The arrival of the winged men is always followed by the departure of the birds, to whom the flying machine appears as a tremendous, rapacious creature of the air, and they become panic stricken and leave the region. Rabbits and other small ground animals are affected in the same way and flee into the most deserted places. The reason for this fear is instinctive, as small animals have long been the prey of large birds of the air, that swooped from above to devour. Aviators think, however, that with time this will change, and that the day will come when flying men and birds will "understand" each other.

Cactus as Fuel.

A use has been found for the huge cactus plants that grow in such profusion in the southwestern sections of our country. Experiments have shown that they contain more heat units than wood or coal, and the fibre when treated gives off a gas which is better for lighting purposes than the ordinary coal or oil gas. The outer rind, or bark, of the cactus when dried is found to be composed largely of resinous matter. The wood is compact and heavy, like rich pitch pine. It is best for open fires, being too rich in pitch for stoves, but it serves a most useful end as kindling. Gas obtained from distillation of the bark gives a a pure white light, vastly superior to the product employed for illumination in our cities. A thousand feet of this gas can be made from the abundant cactus at so cheap a rate that it would not pay to bore for natural gas, while it is free from the dangerous attributes of the latter. This is not the giant cactus, which grows in the shape of a tree, but the pitahaya, which branches out into the form of a bush.

Whetstones.

Whetstones have been in use since men first began to make knives out of iron instead of flint. They have been almost as closely associated with man's progress in the mechanical arts as steel, although in a secondary role. It is not everywhere, however, that these stones are found. Only five or six states in the Union have rocks suitable for making whetstones. In southern Indiana, whence hundreds of thousands of these stones are shipped every year to all parts of the globe, the industry is carried on in the primitive way. The rock is a fine grained, even textured sandstone, bluish or buff in color, and lying in strata from one to three inches thick. It is quarried in slabs, which are marked into rectangles with a scribe awl. The slab is then broken with a light hammer along the lines marked, and the stones are ready for the mill. A steel rubbing disk, 6 feet in diameter, operated by horsepower, grinds them smooth, with the aid of sand and water. They are then stacked up to dry, and are ready for the market.

Secret Wireless.

The secret of practical wireless telegraphy for purposes of warfare would seem to have been solved by the recent invention of a German baron-Von Lepel by name. Two remarkable features of his system are that much less power is wasted to send a message over a long distance than with other systems, and that the intense electric spark, so important but so noisy a feature of many other methods, is lacking. But the special advantage lies in the receiving apparatus, by which feeble and indistinct signals are transformed into loud ones. To explain by analogy the method, suppose one has a large tin vessel in the middle of a frail wooden board which is supported at either end. If water is gradually poured into the vessel its weight continues to increase until the board gives way and lets the tin fall through. In the same way the feeble wireless signals are stored up in a "condenser" until a quickly vibrating interrupter enables the stored up energy to rush into the telephones, which are strapped to the ears of the operator, who thus hears a loud signal. All this, of course, takes place in less than the thousandth part of a second.

Those who have had the opportunity of listening to wireless messages will be familiar with the dull buzz of the telephone signals. Lepel uses a clear musical note instead of a toneless buzz, and this note can be changed at an instant's notice by merely depressing a key.

The operator receiving a wireless message hears a succession of musical notes, and by means of simple adjustments he can tune up his receiver so that they can be neard clear and sharp, while ordinary wireless signals, which would confuse him, can be cut out so successfully that they cannot be heard at all. The new transmitter sends an almost continuous train of small waves to the receiver, while in most systems of wireless, large but quickly "damped" or extinguished waves are transmitted, each requiring a great deal of electric energy. If a heavy penculum is once set swinging, it requires only the faintest push to keep it in motion. It is the same with these small but continuous electromagnetic waves-each signal sent keeps up the disturbance with the minimum of power. The apparatus is small and simple, and would be most appropriate for portable installations. In a demonstration, by pressing the correct notes of the key board, a tune was sent from England to Belgium, and was recognized with ease. It is only a step from transmitting tunes by wireless to sending bugle calls, which may mean anything, prearranged by code. The musical code would be a distinct novelty in wireless telegraphy, but no one can deny that it is merely a subtle development of the art of the ordinary bugler. The tunes could be heard also, no matter how much confusion was attempted by the operator of ordinary wireless systems.

The manner in which these musical notes are caused is ingenious. The continuous train of waves still travels outward from the sending aerial to the receiver, but by means of a control produced when a key is depressed on the key board, the waves are alternately brought to great strength or diminished until quite faint.

New Coast Lighting.

The adoption by the government of acetone gas, acetylene dissolved in acetone, for use of lighthouses, beacons lightships and light buoys, will effect a radical change in the method of illuminating our coasts, and the lighthouse keeper and the buoy tender will soon be forced to find new vocations.

For years the lighthouse keeper has been one of the most picturesque figures along our shores. Isolated for months at a time from the world, many have been the tales of the heroism of the men who trim the lamps that guide the mariner to safety. The houses will still be utilized, but in future the lights will be automatically cared for, only requiring inspection and attention at intervals.

Acetylene, in its various forms, is the only commodity yet produced which will give a light next in power to that of the sun. By its use, inventions have been perfected to produce lights for a continuous period of from one to five years, according to the quantity of fuel installed.

The most wonderful light in the world, now in use by the United States government, is the one invented by Delan, the Swedish scientist. It is produced by acetone gas, and has a "human working" sun instrument containing a glass tube of several rods of varying reflective powers, which automatically opens and closes the valve in accordance with the light absorbed. In other words, the light burns continuously until affected by the heat of the sun, when it goes out, only to be revived at dawn. It also contains a flashing apparatus in the lantern.

Two other types of acetylene light, says a recent number of Popular Mechanics, have been adopted by the Department of Commerce and Labor, which has charge of the work of lighting the coasts. They are known as the Wilson and Goodyear automatic lighting and whistling buoys and beacons. The Goodyear type generates its own gas by means of a mechanical device inside of the buoy, controlled by the pressure of acetylene gas, and a spring feeding the calcium to the water. The Wilson type generates its gas also by water fed to the carbide. The action of the water at the bottom of the buoys, forced through pipes to the whistle, causes perpetual blasts of warning. The power of the whistling apparatus is about six times greater than that of the largest sized Courtnay whistling buoy. As an aid to navigation these buoys are equal to lightships which carry crews; indeed in so far as the knowledge of experts extends, lightships have never yet been equipped with such powerful lights. Mariners have perceived them at a distance of thirty miles.

Both the Wilson and the Goodyear inventions are adaptable to all kinds of coast lighting apparatus. These lights are now in use on the coasts of Connecticut, in the harbor of New York city, at Cape Henry on the Virginia coast, and at Florida points which are dangerous. In the near

future the government will replace the present lights on the Pacific Coast with the acetone and acetylene types. These changes, like those recently made on the Atlantic, will apply only to beacon, buoy and lightship lights. It will be some time before the acetylene lamp will displace the old lighthouse keeper. That change, however, is bound to come.

The general adoption of these new inventions will mean the saving of many thousands of dollars to the government annually. These 'human' devices will automatically do the work of several hundred men now employed in earlier systems of lighting the paths of navigation.

Acetone gas or dissolved acetylene. Delan's wonderful invention, is stored in steel tubes (accumulators) filled with a porous material, soaked with acetone, a volatile liquid, formed by the distillation of wood and many kinds of organic substances. One volume of acetone dissolves twentyfive volumes of acetylene at 15° C.. the solubility increasing in proportion to the pressure, so that at a pressure of 10 atmospheres, one volume holds 250 volumes of acetylene, and at 12 atmospheres, about 300 volumes of the gas. The proportion of perous material and acetone in the accumulators is always fixed, so that one volume of the accumulator holds one hundred volumes of acetylene at a pressure of 10 atmospheres. Several accumulators combined form a larger gas store. capable of supplying gas for a longer time: the life of one accumulator or tube being from three to four months.

In the light apparatus, the governor reduces the comparatively high and always varying pressure of the gas, leaving the accumulator to a constant pressure and one more suitable for the burner. The flash light device produces flashes by automatically admitting to the burner precisely the quantity of gas required for a flash, and then by keeping the gas outlet shut during the eclipse until the next flash. Existing apparatus in this line can never give more than 50 flashes per quart of gas. The Delan flashlight apparatus gives 2,500 flashes for the same quantity. The gas is never throttled, which would mean graqually reduced pressure and varying size of flame. Even during the shortest flashes, its flames are constant. The most important feature of this apparatus is a magnetic device that facilitates the instantaneous cutting off of the gas. Simply by turning two screws, the apparatus is adjusted to give single or double flashes of different charactel. Ordinary steatite burners are used with this system, with an air supply. They have proved solid and reliable. The acetone gas itself, moreover, possesses qualities that add greatly to the permanence and reliability of the burner.

The sun valve is a device facilitating lighthouses and buoys to be automatically extinguished by sunlight. At sunrise this device, coupled between the pressure-reducing valve and flashlight apparatus, closes the gas outlet. At sunset the gas is admitted again to the flashlight apparatus, and to the turner. It must be accentuated that this device, the sun valve, is put into operation only by the sunlight, and that no change of temperature, storm, etc., can interfere with its successful action. Tests in variable climates have shown a saving of from

30 to 40 per cent of gas.

CLASSIFIED list of Patents issued during the month appears in each issue of the Inventive Age. This keeps inventors and manufacturers posted in the art in which they are most interested.—We will send. postpaid, to any address, printed copies of any U. S. patent, with specifications and drawings, upon receipt of 10 cents per copy.—Please give correct data in ordering.—Address,

THE INVENTIVE AGE PUBLISHING CO., 918 F St., N. W., Washington, D. C.

LIST OF PATENTS

---:0:---

Issued May 30, 1911.

MECHANICAL PATENTS.
Continued from July Number.
Razor-stropper. M. R. Buck et al. Receipt-form. E. H. Fell Recepetacle for containing and discharging semisoring among the substances (4)
pats.)
Refuse-hox C A Raggio Reinforcing member J F Loucks Resilient wheel S L Simpson Riveting-machine A A Kramer
Roads, Apparatus for treating
Rolling-mills. R. H. Stevens Rolling-mills, Leading-spindte for V. E. Edwards
Razor-stropper M. R. Buck et al. Receipt-form E. H. Fell Receptacle for containing and discharging semisolid and pasty substances (4 pats.) J. f. Craveu Recording device E. S. Colg Recording-indicator J. L. Zander Refrigerator-car F. Thompson Refuse-box C. A. Raggio Reinforcing member J. F. Loneks Resilient wheel S. L. Simpson Riveting-machine A. A. Kramer Roads, Apparatus for treating. H. K. Potter Rock-drills, Throttle-valve for D. S. Waugh Rolling-mill R. H. Stevens Rolling-mills, Leading-spindle for. V. E. Edwards Roofing-joint F. S. Howard Rope-holder D. V. Bengston Rotary engine J. H. Carroll Rotary impact-engine O. P. Ostergren Rubber stock, Desulfurizing and devulcaniz- ing W. W. Wildman et al.
ing
Safe protective meansW. Welkel Safety or braking device for apparatus driven by fluids under pressure
Safety or braking device for apparatus driven by finids under pressure
Sawing apparatus, Adjustable,
Scales, Conquenting frame. J. F. Richardson Scale, Weighing C. M. Sturgis Scales, Conquensating devices for spring
Scoop .C. E. Skyum Scraper .L. M. Oden
Seal. D. D. Davis Sealing and locking end flaps of boxes to- gether, Tool for. H. B. Walter Sealing newspapers and for similar pur-
Scraper, Road
Sawing-boy II II Katterheinrich
Sewing-machine I. A. Lohman Sewing-machine electric-motor attach- ment II. S. Baldwin Sewing-machine embroidery attachment.
sewing-machine embroidery attrachment. H. Richter Sewing machine, Shoe E. E. Winkley Sewing-machine welt-guide. C. Stegemann Shade-holder for electric fixtures, &c W. B. Spear Sharpener, Knife E. A. Thielemann Sharpener, Planer-knife, W. Harper et al, Shears T. Burkett Shelf-support C. J. Caspar Shock-absorber A. L. Mitchell Shoe F. Beche Shoeplate E. R. Hensser Shovel F. Erickson Shnttle J. F. Dustin Sifter, Ash J. H. Scholding Sign P. H. Bethea Sign J. M. Haud et al Sign and picture frame C. Lindemann Signal system, self-answering E. R. Gill Silicon-oxygen product F. J. Tone
Sharpener, Kuife. E. A. Thielemann Sharpener, Plauer-kuife. W. Harper et al. Shears. T. Burkett
Shelf-support, C. J. Caspar Shock-absorber, G. C. Martin Shock-absorber, A. L. Mittchall Shock-absorber, E. Reche
Shor-plate E. R. Hensser Shovel F. Erickson Shuttle J. F. Dustin
Sifter, Ash
Sign and picture traine
Signal system, self-answering, E. K. Gill Silicon-oxygen product, F. J. Tone Skewer-making machine, R. A. Grover Sled, Coasting-, C. T. Rogers Slide-carrier, J. Proudfoot Slot-machine, C. T. McGill Snap-switch, I. Larsen Snap-switch with inclosed fuse.
Snow concerning and menting machine II. Petersen Snow-plow
boot and shoeA. Olson Sound-recording apparatusJ. Noll Sound-reproducing machineR. L. Gibson
Speed-governor R. F. Hantwen Speed-indicator E. Thomson Spigot G. G. B. Carroll Spinning-machine C2 pats.) A. and J. Stell
Spring-clip. C. F. Grabau Spring-wheel. F. T. Maurer Stamp-affixer. A. Schermack
Snow collecting and melting machine. II. Petersen Snow-plow. I. W. Vickers Sole edges, Machine for operating upon boot and shoe. Sonnd-reproducing apparatus. Sonnd-reproducing machine. R. L. Gibson Speed-governor. R. F. Halliwell Speed-indicator. Spigot. G. B. Carroll Spinning-machine (2 pats.) A and J. Stell Spring-clip. Spring-wheel. Spring-wheel. Stamp-affixer. Stamp-affixing machine. Stamp-batteries for crushing or milling ores, Apparatus for removing dies, heads, Ac. from. Thomas
&c., from
Stapling mechanismG. W. Church Steam-trapR. Freer et al. Steel billets and commercial blanks, Man-
Stamp severing and applying apparatus Staple-retainer

Stove and rangeL. Scruggs
Shovepipe-sections in position, Means for securing. J. R. Lambeth Strainer, Water F. E. Keyes
Street-sweeping abbutains D. Jones
Stretcher, FoldableF. Garpheide et al.
Stuffing-box follower M. Henderson Stuffing-box follower W. G. Driggs Stuffing-box gland D. P. Fleming Suction priming-cup O. E. Appel Suspenders E. P. Hudson et al. Swimming device J. Wells Swing M. Blachmann Switch L. W. Lowen et al.
Stuffing-box glandD. P. Fleming Suction priming-cupO E. Appel
SuspendersE. P. Hudson et al. Swimming deviceL. Wells
SwingM. Blachmann Switch J. W. Jenson et al.
Switch. J. W. Jepson et al. Switch. F. C. Chlau Switch-operating mechanism J. Leith
Switch-apparating incentalismd. Bethi Switch starter, Multiple F. R. Bacon Synchronizing device F. E. A. Mathelot et al. Talking-machine J. A. Rabbitt Target-trap W. S. Bowers
Talking-marching
Target-trap. W. S. Rowers Taximeter. W. G. Bruhn Tea-blending machinery C. A. Scott Telegraph-transmitter B. P. Hayes Telegraphy J. A. Esslinger
Tea-blending machinery
Telegraphy J. A. Esslinger
Telegraphy. J. A. Esslinger Telephone-support. C. E. Flynn Tempering-tank. B. R. Benjamin
Tension mechanism . E. G. Robeson Tensioning means C. L. David
Tension mechanism. E. G. Robeson Tensioning means. C. L. David Testing-machine. S. H. McKuight Thill-coupling. E. Erickson Thimble attachment. J. T. Ohman Three-wire generator H. F. T. Erben et al. Tintype-machine. F. B. Dickason Tire-case. B. A. Alperin Tire-industries means. Programatics.
Three-wire generator. H. F. T. Erben et al.
Tire-caseB. A. Alperin
H L Corson
Tire-protector, Automobile. A. A. Oilar Tire-setter. B. F. Hobson Tire, Spring P. J. Peterson
Tire. Vehicle-WheelM. B. Carmody
Tool-clamp. C. W. Beck Tool-holder. A. Bergstrom
Tool-holderA. K. Rosenbeck
Tool-holder. J. Ward Tool-holder. H. F. Clifford Tool-holder, Friction. B. F. Vickery
Toy, Electric. E. Sollmann Toy fireworks. E. F. Hamill
Toy money-box. C. F. Gates Toy. Sounding. F. Juhasz
Though laving maching \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Transway, Cable. S. P. Watt Transom-adjuster F. Castelli Transom-lifter R. T. Savage Transporting mechanism. M. F. vom Hoff
Transporting mechanism. M. F. vom Hoff
Trolley head and harpJ. Siragusa et al. Trolley-harpJ. L. Perkins et al.
Trolley-harp. J. L. Perkins et al. Trolley-pole attachment. W. A. Peffer Truck, Baggage T. V. Backwaiter
Truck, Car- Truck, Railway-car. J. Chamberlin
Truck, Car
Truck side frame, Car, W. P. Bettendorf Trunk
Trunk
Times, bobburs, or pirus, Apparatus for
Turbine-blades, Strips forC. A. Parsons
Turbine-blades, Strips forC. A. Parsons Turbine, Fluid-pressure
forO. Junggren Type-writer escapement mechanism
Type-writer line-spacing mechanism
Type-writer tabulator mechanism
The printing As Type her connection for
Type-writing machineE. B. Hess
Type-writing machine
Type-writing machines, Apparatus for as-
sembling J. F. McRirney Universal joint E. H. Messiter Upholstery-machine R. Deimel Vacuum cleaning apparatus F. D. Larson Vacuum supporting device R. Hazelrigg
Upholstery-machineR. Deimel Vacuum cleaning apparatus. F. D. Larson
Vacuum supporting deviceR. Hazelrigg
Valve
Valve. M. La Londe et al. Valve. L. Harms Valve. L. Harms Valve. L. Harms Valve. Antomatic throttle governor O. A. A. O. Walker Valve. Blow-off. F. M. Synder Valve. Blow-off. F. A. Wardlaw Valve for sewers. Regulator. C. H. Dodd et al. Valve mechanism for internal-combustion engines. L. H. Richards et al. Valve. Regulating. G. Taylor
Valve, Blow-off, F. M. Synder
Valve for sewers, Regulator
Valve mechanism A J. Richmond
enginesl. H. Richards et al.
Valvo stom guida Lagamatica E I Colo
Vapor rectifier system. C. P. Steiumetz Vehicle. J. Repetto
Vehicle, electrically-propelled.
Vehicle frames and bodies, Device for resi-
Vehicle levers. Lock for motor
Vehicle-lock A. J. Borst, Jr.
Vehicle-motor
Vehicle-body. Vehicle, electrically-propelled. R. Siegfried Vehicle frames and bodies, Device for resiliently supporting. R. G. T. Lister Vehicle levers, Lock for motor. R. G. Handy Vehicle-lock. Vehicle-lock. Vehicle-motor. Vehicle-motor. Vehicle-spring, Shock-absorbing. Vehicle-wheel.
Vending-machineS. L. W. Coe et al.
Vending-machine coin-testing device P. A. Robichon

Veneer-drier. C. A. Haas Ventilating-cap. P. Mueller Ventilating system. M. Gans Ventilator and heating apparatus. Com- bined. W. T. Claycomb Ventilator-frame. G. Kahn Vessels, Method and apparatus for pro- ducing exhausted. 1. Laugmuir Voting-machine G. Felland Walled sheet-metal structure (2 pats.) P. M. Wege Watch-charm. A. Simon Water-circulating systems, Device for fill- ing. G. E. Hulse
water-elevating apparatus
Water-elevating apparatus
WheelT. Wilhelm
Wheelbarrows, Wearing-shoe for

Issued June 6, 1911.

MECHANICAL PATENTS.
Abrasive apparatus
Acyl derivative of morphinll. Hoericin Adding-machine transfer mechanism
Adding-machine transfer mechanism G. J. Barrett Adjustable stand
Alarm-lock
Auchor, Land
C. R. Basford Automobile coupling attachment
Automobile emergency-brake, L. L. Lesoine Automobile wind-shield, Folding, O. E. Byron Av. P. J. Young
Av. P. J. Young Bule-tying mechanism for balers. G. Schubert
Rand-brake G. Schubert Rand-brake W. F. Oberhuber Bank, Savings- C. A. Wales Barrel-heading-up machine C. Grotnes Barrel, Rolling- H. A. Johnson et al. Basket A. M. Taylor Battary plates Waking secondary
J. E. Frederickson Rearing, Adjustable. E. J. Frost Rearing, Antifriction center S. P. Rush Beater A. Hannaford Relt. L. H. Gibner Rinder-finger-releasing mechanism
Bit for rock-drills, moils, and picks
Plast-furnaceb. N. McCarter Bleaching and softening jute fiber
Ribd-iron F S. A. Flower Blotting. J. M. Burby Blower, Rotary. T. W. Green Roat, Submarine G. B. Yerton Boiler (2 pats.). T. T. Parker Book-leaf holder. J. W. Jaggars Boring-tool. C. A. Tunks
Bottle, AntirefillableO. Papp

Bottle-filling apparatus, Siphon	
A T T	
_ · · · · · · G. L. Kemled	y
Bottle-opener	r
Box-fastenerS. Svenso	ie n
Brace-bit for boring wood, Variable-dian	1-
Brake-beam,	n ct
Brake-head, AdjustableP. T. Handige	·S
Brake mechanismR. S. Swartzmelde Brake mechanism W. E. Coffi	n JL
Brake slack-adjusterJ. Gullag	e
Breast-GrillA. Fo Brick-machine	X
Bricks, System and apparatus for hacking	(.
Rricklaying, machine A. C. Pentiel	.d
BroilerB. McCaughe	У
Buckle, Rale-band A. O. Britano	n
Buffing-wheel	r
Brake meenansm. W. E. Coff Brake slack-adjuster. J. Gullag Breast-drill. A. Fd Brick-machine. A. S. Bacc Bricks, System and apparatus for hacking R. C. Pentiel Brickiaying- machine. M. Falcor Broiler. B. McCanghe Broiler. B. McCanghe Buckle. W. A. Holde Buckle. W. A. Holde Buckle, Bale-band. A. O. Brigand Buffing-wheel. W. W. Crooke Burner. T. P. Burk Cage-trap. I. Ramire Calculating-machine. R. H. Marchan Calendar. I. N. Cassif Camphor, Preparing. O. Aschan et a Can bodies and heads, Assembling mechan isin for. J. A. Gras Can-opener. A. P. Rea Can-esling. P. E. Seven et a Canopy-shade. A. P. Stort Car brake, Railway. B. A. Pillo Car-door. J. B. Shelto Car-fender. J. Car-fieldering system Electric	:e
Calculating-machineR. H. Marchar	it
Calendar	y
Can bodies and heads, Assembling mechan	1.
ism for J. A. Gra	y
Cane-slingP. E. Seven et a	i.
Canopy-shadeA. P. Stori	rs.
Car-door	ľ.
Car, DumpJ. B. Shelto	n
Car-lighting system, Electric	ai b
Car, PassengerE. M. Molle	r
Car street-signal	ir
Car-wheel	al
Device for starting motor	Ι,
Carry Stiding days for S. H. Boswe	11
tals, should abors for passenger E. M. Moller et a	1.
Car-door	n
CarbureterS. 1. Presco CarbureterC. F. Co	ET X
CarbureterW. E. Nagebor	n
Carbureting systemH. M. Reichenbac Carcass scraping and polishing machine.	n
J. W. Kobler	1)
Card-table, FoldingR. D. Stackpo Cargo-handling apparatusO. Lindsa	le v
CarrierF. R. Ashto	11
Case-hardeningA. W. Machi Centrifugat separator for milk and othe	et er
fluidsP. T. Sundber	g
Chain, Log	er ee
Chalice	11
Chair desk attachment H. A. Knol Chalice C. J. Ljunggre Christmas tree, Artificial M. C. Croo Churu V. S. Klic Circuit-closer, Automatic L. A. Laplar	ek ek
Circuit-closer, AutomaticL. A. Laplar	it
Credit-closing device, Automatic	ı.
ClampO. Bergstro	m
Cleaning and scrubbing implement	111
Cloth-treating apparatusJ. A. Butle	,I.
Clutch	91 21
Coal-washing jim A C Hoeeke	
The state of the s	er
Cock and pipe-clamp, Combined angle	51°
Cock and pipe-clamp, Combined angle W. Millo Cock, Stop and wasteJ. M. Begs	er er
Cock and pipe-clamp, Combined angle	er er is
Cock and pipe-clamp, Combined angle	er er er er er er er er er er er er er e
Cock and pipe-clamp, Combined angle	er er gs in ox ill
Cock and pipe-clamp, Combined angle	er er er er in ex in
Cock and pipe-clamp, Combined angle	er er gs in ex ill es
Cock and pipe-clamp, Combined angle	er er er er es in es in es
W. A. Collin Clamp. O. Bergstro: O. Bergstro: Cleaning and scrubbing implement. T. A. Schoenla T. A. Schoenla Cloth-treating apparatus. J. A. Butle Clutch G. E. Fai Clutch. C. T. Fletch. C. T. Fletch. Coal-washing jig. A. C. Hoeek Coek and pipe-clamp. Combined angle. W. Mille Cock, Stop and waste. J. M. Begs Coffee-pot. Collapsible. W. W. Irw. Comb foundation and section honey-both therefor. L. A. Aspinwa Communicator. F. W. Reev. Compasses, Attachment for mariners'. G. K. Calhor. Concrete-construction truss-bar. D. Maxwe Concrete-mixer. M. H. ReConcrete walls, Collapsible core for constructing hollow. W. T. Redms	er er er er es in es in es in es
Cock and pipe-clamp, Combined angle	er er er er sin ex in es
Cock and pipe-clamp, Combined angle	er e
Cock and pipe-clamp, Combined angle	er er er er er es es es es es en un elli er er er
Cock and pipe-clamp, Combined angle	er er er er sin ox ell es ell ed a- in le er er er er er
Cock and pipe-clamp, Combined angle	er er er sin ox elli ed a-n le er
Cock and pipe-clamp, Combined angle	er er er er sin ox ell es ell del- er er er er er er er er er er er er er
Cock and pipe-clamp, Combined angle W. Mill. Cock, Stop and waste Coffee-pot, Collapsible Comb foundation and section honey-be therefor Commutator E. W. Reeve Compasses, Attachment for mariners' G. K. Calhor Concrete-construction truss-bar D. Maxwe Concrete-mixer Concrete walls, Collapsible core for constructing hollow W. T. Redma Controlling mechanism Cooper-extracting apparatus Corton-knife Cotton-chopper E. Siegling. Counter-skiving machine Crate, Bottle F. E. Hofgre Cross-head Crutch, Cushion L. J. A. Gill Crutch, Cushion L. J. Fly	er er sin xll es
Cock and pipe-clamp, Combined angle	er e
Cock and pipe-clamp, Combined angle— W. Milli Cock, Stop and waste J. M. Begg Coffee-pot, Collapsible W. W. Irw Comb foundation and section honey-be therefor L. A. Aspinwa Commutator F. W. Reeve Compasses, Attachment for mariners G. K. Calhor Concrete-construction truss-bar D. Maxwe Concrete-mixer M. H. Ree Concrete walls, Collapsible core for con structing hollow W. T. Redma Controlling mechanism W. A. Dob Cooling device T. Coop Copper-extracting apparatus V. A. Brew Corn-knife J. C. Pletsch Cottou-chopper F. Siegling Counter-skiving machine F. A. Thurste Crate, Bottle F. E. Hofgre Cross-head J. A. Gil Crntch and cane tip P. W. Pra Crutch, Cushion I. II. Flyi Crutch, Cushion I. II. Flyi Crutch, Cushion I. F. Gree Culverts, &c., Collapsible molding device for G. W. Rik	er er sin xelle er
Concrete-mixer	ed- n- nle er er er er er er er er er er er er er
Concrete-mixer	ed- n- nle er er er er er er er er er er er er er
Concrete-mixer	ed- n- nle er er er er er er er er er er er er er
Concrete-mixer	ed - in le er
Concrete-mixer	ed - in le er
Concrete-mixer	ed - in le er
Concrete-mixer	ed - in le er
Concrete-mixer	ed - in le er
Concrete-mixer	ed anne er
Concrete-mixer	ed anneerereumsstunneerllhuseetyeelleef
Concrete-mixer	ed anneerereumsstunneerllhuseetyeelleef
Concrete-mixer	ed anneerereumsstunneerllhuseetyeelleef
Concrete-mixer	duneerreetungerilhuseetyeelleetoneison
Concrete-mixer	ed on le errere et un errere et un le errere et un errere
Concrete-mixer	ed and earlier
Concrete-mixer	ed and le errere de la company
Concrete-mixer	ed and le errere de la company

THE INVENTIVE AGE.

Drilling and reaming implement	I
Electric circuits, Combined fuse-box and	I
switch for] : [
switch for	Ι.
Electric-lighting system, Antomatic (2 pats.)J. W. Frees et al.	11 11
Electric switch, Time controlled,	1:
Electrotpye and making same	11
Embossing-machine R Mitchell Emulsifier J. C Alexander Engine-crank-case attachment, Gas	Į ₁
Engine-crank-case attachment, Gas	I 1 I 1
E. E. Hans Engine dynamo sets, Ignition system for gas	In In
compressorE. Hill	11
Excavator J. P. Farrelly Exhauster G. P. Brand	K K
Excavating-tool. R. A. Bonnell Exeavator. J. P. Farrelly Exhauster. G. P. Brand Explosive-engine. S. D. Shakley Expression, Process of and apparatus for. Extraction process and apparatus therefor. J. J. Berrigan Exceplass-guard. W. D. Thomas Eyeglass-mounting. C. M. Stevenson Eyeglasses. J. F. Adt	I.
Extraction process and apparatus therefor,	L: L: L:
Eyeglass-guard W. D. Thomas Eyeglass-monuting C. M. Stevenson	L
Eyeglasses. L. F. Adt Eyelash, Artificial. A. Taylor Feathers, Apparatus for grinding stems of.	L
Feathers, Apparatus for grinding stems ofF. Birck	L
Feathers, Apparatus for grinding stems of. F. Birck Feed-box, PoultryF. A. Zimmer Feeding deviceH. B. Cooley Fiber stalks for decortication and conversion into fiber. Apparatus for preparing unrettedC. Colahan Fiber with liquids, Apparatus for treating. J. F. White Filaments, AnchoringH. Remane File and transfer-binder, Invoice	L: L:
sion into fiber, Apparatus for preparing unested	L
Fiber with liquids, Apparatus for treating. J. F. White	L
	L
File-wrapper R. Greenhood B. S. Blaine	
Filtering apparatus, RotaryA. J. Arbuckle Fire apparatus for elevatorsJ. E. Higgins Fire apparatus for elevatorsJ. E. Higgins	Lo Lo Lo
Fire-escapeH. Bellmann et al. Flue stop and thimbleR. C. Snyder Fluid-pressure brakeW. V. Turner Fluid-pressure regulatorC. G. Koppitz	L
	L
W. Shaw et al. Fodder-box. T. H. Korner Food products, Making A. S. McKenzie Foot-gnard. S. K. Dunkle Freezing of water in stock-tanks, etc., Means for preventing. U. G. Smith	\mathbf{M}
Food products, MakingA. S. McKenzie Foot-guardS. K. Dunkle	M M
Means for preventing	М М М
F. W. Krone, Jr. Fruit-separator. G. D. Parker	M M
Funnel-indicatorJ. C. Parker Furnace-roofM. T. Goss	M M
Furnaces, Charging blast	М
Means for preventing. U. G. Smith Frost-preventing apparatus. F. W. Krone, Jr. F. W. Krone, Jr. Fruit-separator. G. D. Parker Funnel-indicator. J. C. Parker Funnace-roof. M. T. Goss Furnaces. Charging blast- I. D. Williams et al. Fuse. R. P. Bernardini Fuse-block and switch. Combined multiple. P. E. Westerdahl Fuse, Refillable cartridge- E. B. Mallory Game apparatus. W. A. Hatcher Game apparatus. P. W. A. Mic Game apparatus. P. W. A. Mic Game apparatus. P. W. A. Mic Garbage-cau. W. F. Gage Garbage-incinerating and steam-generating system. C. A. Byrne Garments, etc. Means for packing and transporting. E. Metzger Gas burner. Acetylene- F. E. Baldwin Gas-burners, Circuit-controlling apparatus	M M
Fuse, Refillable cartridgeE. B. Mallory Game apparatusW. A. Hatcher	М
Game apparatusP. W. Amlie Game apparatusC. Grenzebach	M
Garbage-eau	М
Garments, etc., Means for packing and	M M
Gas burner, AcetyleneF. E. Baldwin Gas-burners Circuit-controlling apparatns	М М М
Gas-burners, Circuit-controlling apparatus for electricE. A. and E. N. Frary Gas-generatorG. M. Eckels Gas lighting and extinguishing apparatus	М
Gas lighting and extinguishing apparatusE. H. Elton et al. Gas-producer systems. Saturating means	N N
Gas-producer systems, Saturating means for	X X
same, Means for controlling the supply of	N N
Gas, Treating distillation-gases to produce an illuminating liquefiedH. Blau	Oi Oi
	Oi Oi
Gases given off in the destructive distillation of coal, etc., Treatment of	Oı
Gate	O1 O1 O3
Gearing P. Daimler Gearing Belt F. B. Fischer	Pa Pa
Gearing, TransmissionH. Richards et al. Gearing, TransmissionH. A. Rhodes	$-\frac{\mathrm{P}}{\mathrm{P}}$
Glass bottles, Method of and apparatus for manufacturingF. O'Neill Glassware-manufacturing machine	1,1
Gassware-manufacturing macrine	Pl Pl Pi
Governor, Explosive-engine. B. O. Smith Governor, Impact-engine. H. E. Procunier Grain-cleaning machine. O. J. Erickson Grain-separator. S. M. Schindel Grease-enp. G. W. Thrailkill Grinding-machine. J. M. Thompson Gun, Differential-recoil. K. Haussner Gnn firing muchanism. Breech-loading- (3 pats.). A. T. Dawson et al. Hair entting and shearing machine. F. Kober	Pi
Grain-separator. S. M. Schindel Grease-enp. G. W. Thrailkill	Pi
Grinding-machineJ. M. Thompson Gun, Differential-recoilK. Uaussner	Pi Pi
pats.)	Pi
Hair cutting and snearing machine. F. Kober Hair-drier. G. M. Kazanjian Hanger. E. H. Gross	Pi Pi Pl
Hanger. E. H. Gross Harrow, Disk J. R. Neff Hay-rack. E. M. Snavely	Pl
Head-gate	Pl
Heaters, Safety device for immersion	[1] [1]
Heating apparatusM. and M. M. Meran Heating unit, ElectricE. J. Ovington Heel and sole protectors for boots and	PI Pl Pi
shoes, Machine for making and setting	- 14 - Pe
Heel and sole protectors, Machine for setting	Pe Pe
Hinge	Pe
Hoes, ManufacturingE. P. Alexander	P

Hog-scraperJ. W. Kohlhepp Hog-scraperJ. W. Kohlhepp	Pi Pi
Horus, Phenmatic bulb for J. A. Broadfield Horse-detacher. J. M. Lindsey],i
Hog-scraper. J. W. Kohlhepp Horn-reed, Antomobile. F. Bishop Horns, Phenmatic bulb for J. A. Broadfield Horsé-detacher. J. M. Lindsey Horse-overshoe. A. Finsel Hose-coupling. W. J. and J. H. Yancey Hose-coupling-applying implement.	1,1
Hose-supportT. J. Glover et al.	Pr Pr Pr
Hydrocarbon-burner. A. O. Bradford Ice-creeper. C. A. Marshall	Pi
Hydrocarbon-burner. A. O. Bradford Ice-creeper. C. A. Marshall Igniter for gas-burners. J. Jergle et al. lucubator, Electric. E. H. Schorer Insulating caucopies for electrical distribution exercises.	Pr Pr
tion systems, Means for G. A. Lutz Insulator-pin machine F. Schanzmeyer	Pi
Troning-boardJ. II. D. Everett Ironing device, ElectricG. A. Ricks	140 140 14
Insulating canopies for electrical distribution systems, Means for G. A. Lutz Insulator-pin machine F. Schanzmeyer Internal-combustion engine D. M. Tuttle Ironing-board J. H. D. Everett Ironing device, Electric G. A. Ricks Ironing-machine P. Jonesku Ironing-machine A. T. Hagen et al. Irrigating apparatus L. B. Harris Jewel remover and replacer . F. Winkler	Pu Pu Pu
lewel remover and replacer. F. Winkler Key-fastener. C. S. Sukeforth	Pu Pu
Jewel remover and replacer. F. Winkler Key-fastener. C. S. Sukeforth Key-ring. W. L. Deming Labeling-machine. W. R. Wulfeck Lace. C. W. Birkin et al. Lamp. W. G. Bowen Lamp, Arc- M. Korting Lamp, Berth- M. M. Schneider Lamp, Electric-arc O. A. Ross Lamp. Electric incandescent. JI. Remane	Pu Tu Pu
Lamp, W. G. Bowen Lamp, Are M. Korting Lamp, Porth M. M. Schundler	Pu Pu Pu
Lamp, Electric-arcO. A. Ross Lamp, Electric incandescentII. Remane Lamp-globes and the like, Holder for	Pu
D Mitton	Qu Ra Ra
Lamp, Miner'sR. D. Cochrane Lantern-frame, TubularC. T. Whipple Lathe work-centering deviceR. H. Fay Leuther-dressingT. A. Drake	Ra Ra Ra
Leather-Repairing cracks in patent	Ra Ra
Legging M. Rosenwaser Letter-sheet and envelop, Combined F. H. Gregory	- Ra - Ra - Ra
Level, Surveyor's	Ra Ra
ating and collecting particles of one F. G. Cottrell LoekL. Fossati	Ra Ra
Loek-ring for rolls. A. Grossman Loom-shuttle. J. F. Dustin Loom shuttle-motion. M. J. V. Yost Looms, Wage-registering apparatus for me-	Ra Re
Looms, Wage-registering apparatus for me- chanical. S. Marschik	Re Re
Lubricator C. B. Hodges Magneto S. A. Duvall	Re Re
Looms, Wage-registering apparatus for mechanical S Marschik Labricator. C Stewart Lubricator. C B. Hodges Magneto. S A Duvall Mail-bag catcher. C A Frame Mail-box attachment. W H. Stark Massage apparatus. J. P. O'Brien et al. Mechanical movement. T. A. C. Both Mechanical movement. G. Grosvenor Mechanical movement. J. A. Workman, Sr. Metal package. T. H. Kane Menallic fie and rail-fastener. A. Williams	$_{ m Re}^{ m Re}$
Mechanical movementT. A. C. Both Mechanical movementG. Grosvenor	Rie Rie
Metal packageT. U. Kane Metallic tie and rail-fastenerA. Williams Metallic tie and rail-fastenerJ. If't	Rin Rin Ro
Metallie tie and rail-fastenerJ. 16't MethoxymethylmentholM. Dohrn et al. Microbes, BreedingO. Schmidt Milk, CondensingJ. C. Alexander	Ro Ro
Milk, Condensing. J. C. Alexander Milk-cooler. E. L. Wallace Milk in fresh condition. Retaining.	$ m R_0$
Milking-machine	Ro Ro
Mold for forming sidewarks and other file	Ro Sa Sa
Monorail-switch. H. M. Harding Motor. J. E. Yost Motor. H. B. Holt et al. Motor-controller. C. T. Henderson Movement device, Uniform- A. Sundh Moyor Lawn. F. M. Moody	Sa
Motor-controller	2 2 2 3 2 2 3 3
Musical instrument supporting stand and	Sa: Sa:
playing mechanism C. W. Unger. Jr. Nail-clipper J. A. Browning Nail-machine F. L. Eiler	Sa
Nail-machine F. L. Eiler Nnt-lock A. G. Busbea Nut-lock T. F. May Nut-lock C. W. Marshall Nut, Lock- T. J. Parks Nnt-locking device C. Totten Nuteracking-machine C. H. Jacobs Oiltank J. G. Orth et al.	Sar Sea
Nut. Lock	Sea
Oil-tank J. G. Orth et al. Oiler, Car-journal E. P. Bergman	Sea
Nateracking-machine. C. H. Jacobs Oil-tank. J. G. Orth et al. Oiler, Car-journal. E. P. Bergman Orchard-heating apparatus. W. H. Inderwood Order sheet and book. H. Bucklin Ore-concentrating belt. T. R. Brooks Ore treatment. T. J. Lovett Ozone-generator E. P. Woillard Paint and varnish remover. C. Ellis	Ser
Ore-concentrating beltT. R. Brooks Ore treatmentT. J. Lovett Ozone-zeneratorE. P. Woillard	7. 7. 7.
Paint and varnish removerC. Ellis Paper-cutting machineT. C. Dexter PastenrizerB. D. Pinkney PercolatorJ. R. Holley	Sha
Photographic-printing apparatus	Sh: She
Photographic-printing machine G. R. Olson Photometer D. M. Moore	She She She
Piano-action	Shi
Picture and other image projecting apparatus, Attachment for F. J. Reilly Pipe coupling, Train A. Potter Pipe-joint, Ball-and-socket J. Koenig	Shi
Pipe coupling, Train- A. Fotter Pipe-joint, Ball-and-socket. J. Koenig Pipe plug and flushing-nozzle, Drain	Shi
W. A. Coles Pipe-tongs G. A. Lane Piston C. E. Gee	She
	She She
Plastics, Process of and apparatus for molding. J. J. Berrigan Plow. J. Bryan	Shi
Plow II. G. Klaus Plow II. Monaghan Plug Payersa attachment II. Hubbell	Sig
Plug. Separable attachmentII. Hubbell	Sile Sile
Pocket-knife, Take-down C. H. White et al. Posts, Driving-cap for M. Roovaart Potato-digger T. G. Herbert	Sla Sm Sua
Power-transmission deviceA. F. Sturm	Sno
Press	Sor

Press for plastic materials, W. B. Updegraff Pressure-gage. M. Gelge Pressure-indicator, Recording, A. S. Lyhne Pressure-regulator. C. G. Koppitz Printing and delivering apparatus, Street-car-transfer. A. J. Melectrinting-frame. A. C. Hayden Printing-frame. B. L. Mickaelson Printing-machine. W. Jackson Printing-press sheet-delivery mechanism.
Printing and delivering apparatus, Street- car-transfer. A. J. Meicr rinting-frame. A. C. Hayden rinting-frame. B. L. Mickaelson rinting-machine. W. Jackson rinting-machine. W. Jackson rintiag-press sheet-delivery mechanism C. Henderson ropulsion of submarines, Utilizing steam- engines for the G. F. Jambert rotractor and T-square. F. A. Del Castillo full-socket (2 pats.) H. Hubbell rulverizing-apparatus, Centrifugal impact D. O. Marks ump. E. R. Eppler
D. O. Marks Cump. E. R. Eppler Cump. W. H. Bennett Cump. W. H. Bennett Cump. C. E. White Cump and aerator, Combined R. W. Kelly Cump. Deep-well J. Gleason Cump for liquid-sprayers L. A. Aspinwall Cump Rotary A. Catoli Cumping system E. H. Perkins Cumping system E. H. Perkins Cumching-machine character Cunching-machine A. Bates Curitier G. T. Smith curse F. Holroyd Cush-button F. E. Altemus Cuzzle, Historical and educational L. S. Whitelaw cuilting-frame E. S. Mann cail-chair R. M. Williams, Jr. cail-joint J. Pillig cail-plate and wheel-guard, G. H. Langton cailway-brake S. Sheldon cailway-crossing R. H. Pilcher Carloy Control Control Co
Purse. F. Holroyd Push-button. F. E. Altenus Puzzle. Historical and educational. L. S. Whitelaw uniting-frame E. S. Mann edillowed W. R. Volke et al.
allway-rail R. D. Moore allway-rail J. P. Coleman allway-tie W. Fullard
Lake. J. G. Alexander ake-ceaning mechanism. Horse-kazor, Safety- C. A. Hubbs eccipt system H. A. Alkins
efrigerator
esilient wheel. J. C. Matheson desilient wheel. W. F. Masters desistance unit and making the same
tim, DivisibleF. R. Barker et al. tim. Removable tubularJ. C. Cole ing-moldA. Herman tolls, Machine for reducing spiraly-wound.
idge-drill
oundabout W. J. Dammling ad-iron A. G. Judd ales-pad holder, Manifolding- E. L. Mooney
and-molding machineW. C. Wiufield anding-machine and the likeJ. Maher ash constructionG. H. Forsyth ash-holderZ. A. and A. K. Mills ash-weight moldF. II. Hamilton aw machine. ScrollC. H. Heidel aws or tools. Insertible tooth for metal-enttingS. Newbold awing-machineJ. C. F. Bolton awing machine. WoodE. Graham caffoldC. W. Prosecale. AutomaticJ. L. Jenkins
eale, Grain-weighing A. and A. T. McLeod erubbing and brushing machine
eparating solids and liquids
wing-machine thread-controller
hade
hade
C. F. Gray hade
coundabout. W. J. Dammling ad-iron. A. G. Judd ales-pad holler. Manifolding— and-molding machine. W. C. Wiufield anding-machine and the like. J. Maher ash construction. G. H. Forsyth ash-holder. Z. A. and A. K. Mills ash-weight mold. F. H. Hamilton aw machine. Scroll— C. H. Heidel aws or tools. Insertible tooth for metal-entting. S. Newhold awing-machine. Wood— E. Graham caffold. C. W. Prose cale, Automatic. J. L. Jenkins cale, Grain-weighing A. and A. T. McLeod crubbing and brushing machine. C. F. Pease caling jars and bottles. Apparatus for. R. E. Meyer eparating solids and liquids. E. G. Spilsbury eparator-bowl. J. C. Alexander ewing-machine pedal. H. Riecke ewing-machine thread-controller. C. F. Gray hade. R. M. Divon haft spring-support, Wagon-P. W. Zeller neet-delivery mechanism. M. H. Piper heet-feeding mechanism. M. H. Piper heet-fee
TAX 11.1 111
hade

Sodimic blearon, te. Ma.
Sodime bleare acte, Ma, Sparksarrester, W. H. Gordon, Spark plug, W. W. E. of G. H. 2800. Speed-Ruiting device on a real of the Spark plug. W. E. W. E
Spinning or (wisting and vindic,2) but
Spring-wheel R. E. Arrold of
Spring-wheel W. Set. I. Sprinkler system, Automatic
Steam-packet R. M. Dixor Steel bars and plates, Producing W. McConway Stereoscope H. A. Douglas Stone-truing tool F. B. Potter Stopping device, Automatically operated Devices and Device College and Device College and Device College and Device
Storage-tank
Stove, Electric radiatory
Suction-cleaner II. Harrold Sugar manufacture, Puritying raw joices in the M. Kowalski Surveying instrument A. M. Weimer Suspenders, Adjustable back attachment for
Surveying instrument. A. M. Weimer Suspenders, Adjustable back attachment for. L. Katzner Swimming device. J. A. Edwards
Swingletree and neck-yoke W. R. Yeargle Swingletree and neck-yoke W. R. Yeargle Switch-closer, Automatic W. Noakes Switch safety mechanism, Operating means for F. C. Anderson Syringe, Prostatic N. Pernice Tag holder for vehicles, License.
Syringe, ProstaticN. Pernice Tag holder for vehicles, LicenseP. Hauck
Tap-wrench P. Hauck Tap-wrench O. Parpart Telegraphy. Receiver for wireless R. H. Retolahi Telephone system JI. P. Clausen
lock-nut device for party-line (2 parts)
W. M. Bruce, Jr. Telephone, Selective system for party line, W. M. Bruce, Jr. Telephonic currents, Propagating.
Testing mechanisml. F. O'Connor
Tie and rail-fastener F. W. Worley Time-indicator C. S. Comins Tire, Antomobile A. D. Simpson Tire, Uleyible metallic W. C. Nicholson
Tire for wheels, ElasticC. A. Wheaton Tire protector, PheumaticD. B. Stevenson
Thermometer, Clinical. R. F. Schneider Tie and rail-fastener. F. W. Worley Time-indicator. C. S. Comins Tire, Antomobiles. A. D. Simpson Tire, Flexible metallie. W. C. Nicholson Tire for wheels, Elastic. C. A. Wheaton Tire protector, Pneumatics. D. B. Stevenson Tire-support, Adjustable. E. W. Kingsley Tire, Vehicles. J. W. Gilliam Tool, Combined rotating and reciprocable. C. A. Gustavson et al.
Tool-shank
Tool-shank
Tool-shank. G. E. Hackett Toy. Dancing. R. E. Baker et al. Toy parachute. M. E. Wright Toy pistol. R. A. Moore Traction-engine. P. E. Holt Traction-whoel. M. J. Todd Training and amusement purposes. Apparatus for. C. Berzac Truck, Car- (2 pats.t. H. C. Buhoup Truck, Pivoted front steering-, P. E. Holt Truck, Railway- W. M. Fawcett et al. Tunneling-machines. Muck shoveling, catching, and conveying apparatus for
Tool-shank. G. E. Hackett Toy. Dancing. R. E. Baker et al. Toy parachute. M. E. Wright Toy pistol. R. A. Moore Traction-engine. P. E. Holt Tration-wheel. M. J. Todd Training and amusement purposes. Apparatus for. C. Berzace Truck, Car- (2 pats.). H. C. Buhoup Truck, Pivoted front steering P. E. Holt Truck, Railway W. M. Fawcett et al. Tunneling-machines. Muck shoveling, catching, and conveying apparatus for G. A. Fowler Turbine-blade. A. Kiemsst Turbine bucket, Elastie-fluid W. Fritz
Tool-shank. G. E. Hackett Toy. Dancing. R. E. Baker et al. Toy parachute. M. E. Wright Toy pistol. R. A. Moore Traction-engine. P. E. Holt Tration-wheel. M. J. Todd Training and amusement purposes. Apparatus for. C. Berzace Truck, Car- (2 pats.). H. C. Buhoup Truck, Pivoted front steering P. E. Holt Truck, Railway W. M. Fawcett et al. Tunneling-machines. Muck shoveling, catching, and conveying apparatus for G. A. Fowler Turbine-blade. A. Kiemsst Turbine bucket, Elastie-fluid W. Fritz
Tool-shank. G. E. Hackett Toy. Dancing. R. E. Baker et al. Toy parachute. M. E. Wright Toy pistol. R. A. Moore Traction-engine. P. E. Holt Tration-wheel. M. J. Todd Training and amusement purposes. Apparatus for. C. Berzace Truck, Car- (2 pats.). H. C. Buhoup Truck, Pivoted front steering P. E. Holt Truck, Railway W. M. Fawcett et al. Tunneling-machines. Muck shoveling, catching, and conveying apparatus for G. A. Fowler Turbine-blade. A. Kiemsst Turbine bucket, Elastie-fluid W. Fritz
Tool-shank. G. E. Hackett Toy, Dancing. R. E. Baker et al. Toy parachute. M. E. Wright Toy pistol. R. A. Moore Traction-engine. P. E. Holt Trantion-wheel. M. J. Todd Training and amusement purposes. Apparatus for. C. Berzae Truck, Car. (2 pats.). H. C. Buhoup Truck, Pivoted front steering. P. E. Holt Trank, Railway. W. M. Fawcett et al. Tunnelang-machines. Muck shoveling. catching, and conveying apparatus for. G. A. Fowler Turbine-blade. A. Kienast Turbine bucket, Elastic-thid. W. Fritz Turbine bucket, Elastic-thid. W. Fritz Turbine cylinder-lining. F. Hodgkinson Turbine Reversible. W. Robinson Type-writing machine. J. C. McLaughlin Universal joint. L. Schwitzer Type-writing machine. J. C. McLaughlin Universal joint. L. Schwitzer Valve. R. A. Milne et al. Valve. E. W. Christie Valve. E. W. Christie Valve. J. Levey Valve Air. F. H. Saner Valve apparatus. J. B. Beaturais Valve for steam-boilers and the like, Mud- cduction. Turbitle. Tarbottle. Throttle.
Tool-shank. G. E. Hackett Toy, Dancing. R. E. Baker et al. Toy parachute. M. E. Wright Toy pistol. R. A. Moore Traction-engine. P. E. Holt Traction-wheel. M. J. Todd Training and amusement purposes. Apparatus for. C. Berzac Truck, Car (2 pats.t. H. C. Buhoup Truck, Pivoted front steerings. P. E. Holt Truck, Railway. W. M. Fawcett et al. Tunneling-machines. Muck shoveling, catching, and conveying apparatus for. G. A. Fowler Turbine-blade. A. Kiemset Turbine bucket, Elastic-fluid. W. Fritz Turbine cylinder-lining. F. Hodgkinson Turbine cylinder-lining. Steam. F. Hodgkinson Turbine, Reversible. W. Robinson Type-writing machine. J. C. McLaughlin Liniversal joint. L. Schwitzer Typle-writing machine. J. C. McLaughlin Liniversal joint. L. Schwitzer Tyle. R. A. Milne et al. Valve. R. A. Milne et al. Valve. R. W. Christie Valve. F. H. Saner Valve Air. F. H. Saner Valve Air. F. H. Saner Valve for steam-engines, Throttle- Valvesonard. J. L. Kelly Valvesonard. J. L. Kelly Valvesonard. J. L. Kelly Valvesonard. J. L. Kelly Valvesonard. J. J. J. J. J. Kelly Valvesonard. J.
Tool-shank. G. E. Hackett Toy, Dancing. R. E. Baker et al. Toy parachute. M. E. Wright Toy pistol. R. A. Moore Traction-engine. P. E. Holt Traction-wheel. M. J. Todd Training and amusement purposes. Apparatus for. C. Berzac Truck, Car (2 pats.t. H. C. Buhoup Truck, Pivoted front steerings. P. E. Holt Truck, Railway. W. M. Fawcett et al. Tunneling-machines. Muck shoveling, catching, and conveying apparatus for. G. A. Fowler Turbine-blade. A. Kiemset Turbine bucket, Elastic-fluid. W. Fritz Turbine cylinder-lining. F. Hodgkinson Turbine cylinder-lining. Steam. F. Hodgkinson Turbine, Reversible. W. Robinson Type-writing machine. J. C. McLaughlin Liniversal joint. L. Schwitzer Typle-writing machine. J. C. McLaughlin Liniversal joint. L. Schwitzer Tyle. R. A. Milne et al. Valve. R. A. Milne et al. Valve. R. W. Christie Valve. F. H. Saner Valve Air. F. H. Saner Valve Air. F. H. Saner Valve for steam-engines, Throttle- Valvesonard. J. L. Kelly Valvesonard. J. L. Kelly Valvesonard. J. L. Kelly Valvesonard. J. L. Kelly Valvesonard. J. J. J. J. J. Kelly Valvesonard. J.
Tool-shank. G. E. Baker et al. Toy. Dancing. R. E. Baker et al. Toy parachute. M. E. Wright Toy p'stol. R. A. Moore Traction-engine. P. E. Holt Traction-wheel. M. J. Todd Training and amusement purposes. Apparatus for. C. Berzac Truck, Car. (2 pats.). H. C. Buhoup Truck, Pivotod front steering. P. E. Holt Truck, Railway. W. M. Fawcett et al. Tunnelding-machines. Muck shoveling. catching. and conveying apparatus for. G. A. Fowler Turbine-blade. A. Kienast Turbine bucket. Elastic-thiid. W. Fritz Turbine cylinder-lining. F. Hodgkinson Turbine cylinder-lining. Steam. F. Hodgkinson Turbine eylinder-lining. Steam. F. Hodgkinson Type-writing machine. J. C. McLaughlin Universal joint. L. Schwitzer Valve. R. A. Milne et al. Valve. R. A. Milne et al. Valve. C. D. Lukens Valve. E. W. Christie Valve. J. Levey Valve apparatus. J. B. Beauvais Valve for steam-hoilers and the like. Mindeduction. H. Baltes Valve for steam-engines. Throttle- Valve-guard. J. J. Kelly Valve Rotary. P. L. Tenney Valve Rotary. R. S. C. Baughu Vehicle shock-absorber. H. Terhorst Vehicle shock-absorber. H. Terhorst
Tool-shank. G. E. Baker et al. Toy. Danceling. R. E. Baker et al. Toy. parachute. M. E. Wright Toy. pistol. R. A. Moore Traction-engine. P. E. Holt Traction-wheel. M. J. Todd Training and amusement purposes. Apparatus for. C. Berzac Truck, Car- (2 pats.t. H. C. Buhoup Track, Pivoted front steering-, P. E. Holt Truck, Railway- W. M. Fawcett et al. Tunneling-machines. Muck shoveling, catching, and conveying apparatus for G. A. Fowler Turbine-blade. A. Kiemst Turbine backet, Elastic-thnids. W. Fritz Turbine eylinder-lining. F. Hodgkinson Turbine eylinder-lining. Steam- Turbine, Reversible. W. Robinson Type-writing machine. J. C. McLaughlin Universal joint. L. Schwitzer Type-writing machine. J. C. McLaughlin Universal joint. L. Schwitzer Valve. R. A. Milne et al. Valve. E. W. Christie Valve. E. W. Christie Valve. E. W. Christie Valve. E. W. Christie Valve apparatus. J. B. Beauvais Valve for steam-hoilers and the like, Mnd- cduction. H. Baltes Valve Gostlating-engine. J. Fitzgerald Valve, Rotary. P. L. Tenney Valve, Oscilating-engine. J. Fitzgerald Valve, Rotary. P. L. Tenney Valve, Rotary. P. L. Tenney Valve, Oscilating-engine. J. Fitzgerald Valve, Rotary. P. L. Tenney Valve, Oscilating-engine. J. Fitzgerald Valve, Rotary. P. L. Tenney Valve, Oscilating-engine. J. Fitzgerald Valve, Rotary. P. L. Tenney Valve, Oscilating-engine. J. Fitzgerald Valve, Rotary. P. L. Tenney Valve, Oscilating-engine. J. Fitzgerald Valve, Rotary. P. L. Tenney Valve, Oscilating-engine. J. Fitzgerald Valve, Rotary. P. L. Tenney Valve, Oscilating-engine. J. Fitzgerald Valve, Rotary. P. L. Tenney Valve, Rotary. P. L. Tenney Valve, Oscilating-engine. S. C. Baughn Vehicle shock-absorber. H. Terhorst Vehicle-top bow-holder. S. T. Allen Vehicle-top bow-holder. S. T. Allen Vehicle-top bow-holder. S. E. Chapman Vehicle-wheel. S. E. Chapman
Tool-shank. G. E. Baker et al. Toy. Danceling. R. E. Baker et al. Toy. parachute. M. E. Wright Toy. pistol. R. A. Moore Traction-engine. P. E. Holt Traction-wheel. M. J. Todd Training and amusement purposes. Apparatus for. C. Berzac Truck, Car- (2 pats.t. H. C. Buhoup Truck, Pivoted front steering-, P. E. Holt Truck, Railway- W. M. Fawcett et al. Tunneling-machines. Muck shoveling, catching, and conveying apparatus for Turbine-blade. A. Kiemst Turbine backet, Elastic-thids. W. Fritz Turbine eylinder-lining. F. Hodgkinson Turbine eylinder-lining. F. Hodgkinson Turbine. Reversible. W. Robinson Type-writing machine. J. C. McLaughlin Universal joint. L. Schwitzer Type-writing machine. J. C. McLaughlin Universal joint. L. B. Kelwitzer Valve. R. A. Milne et al. Valve. C. D. Lakens Valve. E. W. Christic Vaive apparatus. J. E. H. Saner Valve apparatus. J. B. Beauvais Valve for steam-hoilers and the like, Mnd- cduction. H. Baltes Valve for steam-engines. Throttle W. F. Hartzell Valve-Backer. J. Fitzgerald Valve-Backer. J. Fitzgerald Valve-Backer. S. C. Baughn Valve Oscilating-engine. J. Fitzgerald Valve Robinson Valve Deduction. G. Sutter et al. Valve Robinson Valve Robinson L. Schmidt Vehicle shock-absorber. H. C. Wright Valve Robicle controlling mechanism. Molor C. Schmidt Vehicle shock-absorber. H. Terhorst Vehicle-wheel. S. E. Chapman Vehicle-wheel.
Tool-shank. G. E. Baker et al. Toy. Dancing. R. E. Baker et al. Toy. parachute. M. E. Wright Toy. pistol. R. A. Moore Traction-engine. P. E. Holt Traction-wheel. M. J. Todd Training and amusement purposes. Apparatus for. C. Berzac Truck, Car. (2 pats.). H. C. Buhoup Truck, Pivotod front steering. P. E. Holt Truck, Railway. W. M. Fawcott et al. Tunnelding-machines. Muck shoveling. catching. and conveying apparatus for. G. A. Fowler Turbine-blade. A. Kienast Turbine blade. A. Kienast Turbine eylinder-lining. F. Hodgkinson Turbine eylinder-lining. F. Hodgkinson Turbine eylinder-lining. Steam. F. Hodgkinson Type-writing machine. J. C. McLaughlin Universal joint. L. Schwitzer Valve. R. A. Milne et al. Valve. R. A. Milne et al. Valve. C. D. Lukens Valve. E. W. Christie Valve. B. W. Christie Valve apparatus. J. B. Beauvais Valve for steam-hoilers and the like. Mindeduction. H. Baltes Valve for steam-engines. Throttle- Valve guard. J. J. Kelly Valve Rotary. P. L. Tenney Valve. B. C. Sutter et al. Valve Rotary. P. L. Tenney Valve. S. C. Baughn Valve Rotary. P. L. Tenney Valve. S. C. Baughn Valve Rotary. P. L. Tenney Valve. S. C. Baughn Vehicle shock-absorber. H. Terhorst Vehicle shock-absorber. H. Terhorst Vehicle-wheel. S. E. Chapman Vehicle-wheel. S. E. Chapman Vehicle-wheel. S. E. Chapman Vehicle-wheel. S. E. Chapman Velocipede driving and brake mechanism. J. Archer Vent-stopper. W. E. and J. A. Rowe Vessel. Metallic. W. J. Corliss Vessels. Means for raising sunken. J. Skatsebboff

Water-elevatorA. and C. Vaichis et al. Water-heaterB. Vale
Water-heating apparatus (2 pats.)
Weather-strip. AutomaticG. L. Godfrey
Window adjuster, StormS. F. Wells
Window-lock, SafetyE. V. Amate Window-screenA. M. Smith
Wire rack, Screen
Workman's supporting-block. S. E. Gregson Wrench G. R. Bair
WrenchJ. M. Hodgson
WrenchJ. A. Darhy Wringer-gearingN. Hardin
Zinc-sulfite sludge, Utilizing. A. A. Claffin

Issued June 13, 1911.
MECHANICAL PATENTS. Acid ferric arsen-tartrate
Aviation supporting device. G. Barbaudy Awning-support. L. E. Keunedy Baggage-rack. W. S. Hamm Balt, Artificial. W. T. Jefferson Baking-pan. C. Hall Balancing-nanchine. J. F. M. Patitz Balancing-machine. W. E. Moreland Basket for growing plants. H. H. Cahill Battery connection. S. J. Hall Bean-puller. L. D. Stout Bearing. S. S. Harper Bed. Folding. K. Evans Bedstead. Sofa. R. Coopersmith Beef and vegetable extract. N. Sulzberger Beehives, Super for. L. M. Linblom Beet-topper. V. Johnson Bell, Door- J. Straka et al. Belt-guide. F. Duesterhoff Bevel and angle tool. J. F. Gorenflo Beverages, Preparing and dispensing. B. H. Calkin et al. Binder, Loose-leaf. A. M. Southard Binder, Loose-leaf. A. M. Southard Boilers, Fuel and water-distributer. Automatic. D. Dwyer et al. Boilers, Fuel and water supply system for (2 pats.) H. Lemp Bolt-fastener. W. S. Dorman Book-rest, Adjustable. N. Streit Boots or shoes, Machine for operating upon J. Marsh et al. Boring-machine alarm. W. Potter Bottle cap or closure, Milk and other. E. D. Schmitt
Bottle-capsuling machineH. C. Braun BoxJ. B. Grimes Box and crateH. L. Gulline
Pox for containing spooi-silk and the like. A. L. Kingsbury Brake-beam fulcrum
Brake-shoe with cast-metal insert
Brake-shoe with corrugated and perforated insert
Briquet-material mixer and drier Broiling-frame. E. Fernholtz Broom-holder E. Richards Brush-pulling machine, Sage- F. R. Lanne Bucket, Automatic dumping- F. R. McCune Bucket, self-dumping fruit- J. W. Moore Buckle for webbing W. A. Holden Busheling-furnace. F. J. Droege Cabinet, Merchandise- F. M. Montgomery Calculating-machine. A. W. Harris Can attachment, Oil- J. W. Larimore Can closnre, Oil- M. B. Luchsinger Can rack, Oil- T. Miller Candle-molding machine. F. F. Schmitt Cap or headwear. A. J. Novoson Car brake-pipe. Railway- E. Witzenmann Car brake, Railway- H. E. Saylor et al. Car bnfling mechanism, Passenger- Car, Car-door fastener. G. B. Edgar, Sr. Car, Dumping- (3 pats.) A. Becker Car emergency-brake, Street- F. Wirsing Car, Hand- A. M. Paulero Car, Logging- F. W. Chriswell Car switch, Street- B. B. Muir Cars, Load-brace for J. M. Daly Carbureters, Priming attachment for T. J. McCarthy Card-case for folding cards E. R. Sheppard

,				-	. –
Carriages and th	e iike,	Mean	s for a	uto	mati-
Carriages and the cally reversing Cash-box, Porta Cash-register (3 Cash-register, A Collulose compound the compound of the com	ble pats.). nditing		R. N. .W. E I. Flu	Mu L. I. M	rphy Voye Iuzzy Iman
Cement-mixer Centerboard	inds, I	roduciI	ng dy E. Fri F. J. E. 1	ed-a ede: Cle Mov	ncidy- mann mens ybray
Chuck-jawChurn		J. J. V	S. E. O. Di	iay isei k e	ward orton abery et al.
Churn-dasher Cider-press Cigar cutter, lig vice, Combine	hter,	and a	J. P. .N. M dvertis . Davi	Ti Psing	sdale atton de-
ClampClarinet mouthpoor	iece-re	eds, C	D. N lamp 1 .L. H. S. Ko	IcA for. Sta	uliffe arkey et al.
Cleris Clock, Alarm Closet-seat Closet-seat Cloth with a s		. W. M	.M. I E. S . Kur	Pave F. Schi tz e	Goss ndler et al.
Forming Clothes-line fast Clothes-pin	imulat ener	ed me	tallic F. R. L. W.	sur A. Fre- P.	rface, Price eman Sims
Forming Clothes-line fast Clothes-pin Clothes-washer Clutch Clutch, Friction- Coats, Magazine. Coffee, Treating	pouch	for h	W. H. D. unting	E.	rartz Frey
Coffee, Treating Coin-released loc Comb and cigar- Combination-pot.	k cutter,	Comb	H. ined P. Sto N. F	S. egei	Mills mann endry
Composition of r Compressor Computing-machi	natter ne	• • • • • •	C. .J. H. W. A.	J. (H- De Bi	Cruin ockel enton cyant
Computing-machi Concrete and lik mixing and de Concrete-batch n	ine (2 e mate eliverin aixers,	pats.) erials, igS. Load	J. Appar Clark er for	M. atu e e	Daly s for t al.
Comb and eigar- Combination-pot. Composition Composition of r Compressor Computing-machi Comprete and lik mixing and de Concrete constru Concrete-batch r Concrete-mixer. Concrete-pipe-mol Concrete wall a forced. Controller-regulat	etion,	Reinfo	. W. K orced .H. L. .C. C.	L (Tu	ewen irner
Concrete pole Concrete wall a	and li	.W. H	I. Kip E. M. ructure	p e E e, I	t al. lliott Rein- ekson
Controller-regulat Convertible rack Conveyer Copy-holder	or	C.	J. Y. V. H. D. Se .G. A	Weehe	orter ebler erger larsh
Corn-husking imp Cotton-chopper Couch, Knockdov Crate, Animal-ho	olemen vn lding.	t	G. E. G. W. I. E. I	Mai De Im∈ Kir	riner nson erson choff
ing device for. Cream-tester Cultivator, Sprin	and g-tootl	the mi	J. K. W. ats.)	ste Spi	vart raley
forced. Controller-regulat Convertible rack Conveyer. Copy-holder. Corn-husking imp Cotton-chopper. Couch, Knockdov Crate, Animal-ho Cream-separators ing device for. Cream-tester. Cultivator, Sprin Culvert. Curb and gutter Current-eollecting Current-motor.	mold,	M. A. Combi	Quini G. W. ined D. V	Sto	t al. orms
Current-eollecting Current-motor. Curtain-fixture, A Cuttor-guard. Cycle attachment Dental grinding-t Dental plates, Ma Derailment-guard Derailment-guard Die. Die-stock. Disinfecting appa Dispensing-machiplispensing vessel	devic djusta	c	R. P. C. A. .E. B	Jac Ba . Si . A	kson rron mith ndre
Cycle attachment Dental grinding-t Dental plates, Ma	Motoois,	or Guard G.	forB.	M. hitt	razil Fell aker
Derailment-guard Die Die-stock Disinfecting appa	ratus	.н. в	M. F. M. E. R. Fari	W Bl nsw	elch nme orth
Dispensing-machi Dispensing vessel Display apparatu Display cabinet,	ne s0. Pictur	A. Li	.F. O G. H. ndema A. C.	. B Ga n e Phi	ullis rnet t al. llips
Dispensing-machin Dispensing vessel Display apparatus Display cabinet, Display machine, Ditcher and grad Ditching-machine Door-checks, Valy	Auto:	matic W l	poster . E. V R. E. .O. C	VIIIi Haj	iams yncs arks
Door-cheeks, Valv Door-closing device Door-holder Door locking dev Dough-mixing me Dough-sleeting me	re	namisii 	.C. B. J. F. 1	Bis P. H. 1	shop Bair Nett
Dough-mixing me	thod a	and ap	H.C. paratu J.C. .J.J.	Hu Gor Lit	nter rdon iden
Draft-controlling Draft-rigging, Fri Drain-board Draining-rack Draining-table Ax	device etion.	J.	.II. J. F. O C. V J. H.	G'Coi V. Co	reen nnor Mali oper
Dress-shield faste Drier Drilling apparatus Drinking-enp	ener	Н.	C. A .W. I W. Mu	7. I I. I thle Goo	Page Pord isen dale
Dough-sheeting m Praft-controlling Draft-rigging, Fri Drain-board Draining-rack Draining-tube, Ax Dress-shield faste Drier Drilling apparatus Drinking-cup Dumping-rack Dye. Brown vat Dye, Vat Dyes, Orange cot Dyes, Orange cot	.р. т	J. O. homase	B. P. Unge chewsk M.	ush r ei ci e K	nell tal. tal. ugel
Dyes for wool, D Dyes, Orange cot Dynamic motor Egg-detector	isazo. ton	 .w. H	.A. L. .A. L C. I	La La R. H chli	iska iska Held ison
Dyes for wool, D Dyes, Orange cot Dynamic motor Egg-detector Eggs, Preserving, Electric currents feeble Electric switch Electric switch Electric time-ligh	Syst	em fo	G. C. r amp L. De J.	nte plif; Fo K. tho	riey ying rest Lux ades
Electric time-ligh Electrical apparat Electrical appara	t, The	ermaily G. djusta	opera I. L Westii ble	ted . K	iser ouse
Electrical apparatelectrical apparatelectrical apparatelectrical circuits	s, Con	V. T. T	Thoma E. T. E. W.	ch Bis	al. iilds shop
Electrical pull-soc	ket	Е	. н. г	ree	man

Electromagnet	Kaisling
Embroidering-machine, Jacquard	l. Dunton (2 pats.). .R. Zahn
EngineC. Engine-starterJ. B. Kenda Engines, Signal mechanism for	H. Ellis all et al. stopping
railway	H. Bauert rnal-com- Chadwick
Eraser and pen-extractor, Combin Eraser Blackboard	ed Lamoreux
Electromagnet	Johnston
Excavating-machine. J. H. Explosive (2 pats.)	emberton W. Libbe Hibbert
Explosive (5 pats.)J. Saye Explosive compoundW. F. Explosives, Machine for filling st	ers et al. Hancock tells with
(2 pats.)	H. Talley F. Ingold Keilholtz
Fans, Adjustable support for elec E. V Fans, Driving device for gas-engi	tric V. Brown ne
Fans, Adjustable support for electrons, Driving device for gas-enging as a constant of the faucet. Faucet. Faucet. Faucet. G. Feed-crusher screening device. G. Feed-water heater. J. J. Feeding machine, Horse- Fence anchor, Wire- Fence-post. L. A	J. Loomis P. Julius P. Heenev
Feed-crusher screening device G. E. Feed-water heaterJ. J	Sovereign Hoppes
Feeding machine, HorseJ. Fence anchor, WireD. M. Bu Fence-postL. A	B. Johns rns et al. Weaver
Fence-post foundationM. J FenderO. Fertilizer and making same	Gregory A. Ross
Filing-cabinetS. B. Newber	ry et al. Jacobs
Finger-tip protectorW. H. Fire-alarm, AutomaticW. P. Brit	Aspegren ain et al.
Fire-escapeH. C. Firearms, Discharging device for	Lansden
Flat-ironI. E. Hotchk Flexible connectionJ. H.	iss et al. O'Brien
Fly-paper holder	atwright Kunicke
Folding, wrapping and addressing W.	machine. E. Crane
Forge. BlacksmithG. F metachlorophenyl - amino - 1	, Ballard Reinhard - anthra-
n-methylpyridonO. Ung Fruit-drying apparatusG. F Funnel, AutomaticJ. 1	ger et al.). Parker M. Evans
FurnaceJ. R. Furnace compensating deviceF. Fuse-protecting caseE.	Fortune Tschudy C. Pfeil
Feeding machine, Horse. J. Fence-post L. A. Fence-post L. A. Fence-post S. L. A. Fence-post Gundation M. J. Fender O. Fertilizer and making same. Filing-cabinet S. B. Newber Filing-cabinet E. Finger-tip protector W. H. Fire-alarm, Automatic W. P. Brit Fire-escape T. Fire-escape H. C. Fire-escape H. C. Fire-escape H. C. Fire-escape H. C. Fire-escape W. T. Fire-by Discharging device for H. G. G. von S. Flat-iron I. E. Hotchk Flexible connection J. H. Floor-rubber J. Fly-paper holder W. P. Brit Fly-paper holder W. P. Brit Flying-machine G. Flying-machine G. Flying-machine J. W. W. Folding, wrapping and addressing W. Foot-warmer, Electric S. Forge Blacksmith G. F metachlorophenyl amino 1 n-methylpyridon O. Ung Fruit-drying apparatus G. F. Funnace J. R. Funnace J. R. Furnace Compensating device F. Gage H. C. Gare apparatus L. G. Gare apparatus M. M. E.	Metzger). Sutton e Grody
Farment-fastener	Bouvier J. Kohn ea et al.
Gage. H. C. Game apparatus. L. C. Garbage-receptacle. M. M. I. Garment-fastener. G. Garment-rack. Collapsible. Gas-engine. O. C. Durydas-fixture attachment. J. Gas generator. Acctylene- J. J. Gas generator and burner, Oil E. P.	H. Cato Γ. Finley
as generator and burner, Olis E. P. Gas-purifier	. Magoon E. Speer ther pur-
poses, Apparatus for producing stant	a con- hrenheim odorizing
Consumption	. Kiesei
A. F. Gaskets in manhole-frames, Forn tallic	Shepherd ning me- H. Jones
Sasolenc-tank	hwiesow . Folsom
F. A. 1 Fear-wheel	Froehlich Stratton Saerbalck
Firder-cutting device	H. John eing hol- Arbogast
tomatically controlling the flow tomatically controlling the flow A. F. Caskets in manhole-frames, Forn tallic Casclenc-tank. W. F. Sc Cate. W. C. Cear mechanism, Reversing- F. A. J. Cear-wheel. H. E. Cearing. H. E. Cearing. H. E. Cearing. H. F. Cearing. C. V. L. Cea	. Martin iratus ardinois
lass-molding apparatusJ. J.	. Wanko vice for S. Crane
rain-binderB. R. I rain-cleaner supportH. J. M rain-shocking deviceG. I	Benjamin Ichaelsen H. Tracy
ranite, marble, stone, and analog stances, Apparatus for sawing ar ingJ.	ous sub- id work- Peckover
rass-catcherJ. A rease, PreservingS rinderW. J	. Eberle . Fenger Mandley
rinding, variable curves, Machine Suard, Self-adjusting	e for Witmer S. Eskin
Jair-pin, SafetyA. Fro Jammer, BrickJ. A Jammer, Drop-	deriksen Nelson A. Koch
ing J trass-catcher J. A trease, Preserving S rinder W. J. trinding, variable curves, Machine sard, Self-adjusting fair-pin, Safety A. Fro fammer, Brick J. A fammer, Drop- fandle for cocks, faucets, and val P. farrow and cultivator, Combined J. S	ves Mueller
larrow and cultivator, Combined. Larvester, Corn	. Marsh G. Kelso O'Brien
(at-pin protectorD. 1 Fat-press, Automatic hydraulic J. Feading-machine	Ferguson Marshall C. Grant
leat, Utilizing naturalC. S. leating and ventilating system.E. leating process and system.	Bradley H. Gold
feating process and systemJ. M. W. feating systemE. felical heater for tubes, etcJ. foneycombs, Capping shaver and for	Kitchen E. Gold I. Aver
(oneycombs, Capping shaver and for	melter L. Baker W. Sims

						=
Hose- Hose-	connect couplin couplin	tor		E. J. Leh	Rohrl	Dacher Davis et al.
Hose Hydr	sprayi ing-mac anlie ge	ng atta chine overnor	Jachment the	t, Gar T	den G. . G.	Olney Kelso
Ice. plat Ice-br	Appara te	tus fo	r the	manu W.	factur H. S. I	re of Sioan eyens
Ice-cu Ignite Igniti Indig	er. Fue on dev: o and	nachine l ice makin	g same	F. L. .J. F e. Yel	Esche P. G Cav Jow-c	nbach aguon anagh olored
der: Inhal: Ink-st	ivatives ing dev tick	of	• • • • • • • •	G. .H. N	Engi I.] . De	et al. Palocz Lanoy
Insula Insula	ated rec	eptacle r electi	eric cond	luctor W. G	H. B. S. Sec . Hai	emsey Seely etion milton
Insulation Insulation	ator-pin ig-board rench	l. Fold	ableC. S.	Hon	C. G	et al.
Jig Kindl Knitt	ling dev	rice	Hosiery	G. A	B. S.	hipley Keevii
Ladde Ladde Lamp	er attac er, Ext -bracke	chment ension- t	Hosiery (5 pats. (5 pats. Safety t. escent. descent genera ng deviA. C. A.	A. W.	E. C. A. I F. M	Mead Mead Barnes Iorrill
Lamp Lamp Lamp Lamp	, Elect: , Elect -exting: -fixture	ric-arc ric hai uisher,	(5 pats. id Safety	.), J. H. S L.	I. Ha Siegen Kvind	llberg bruch legard
Lamp Lamp Lamp	, Inear lock, socket	idescen Incand , Incar	t escent-, idcscent	. M. A. H	M. M O. M . E.	lerritt lackln Evans
bon- Land-	rollers,	Steeri	genera ng devi A.	ce for S. F	r nya Rock '. Rol	rocar- sstead oinson
Lante Latch Latch	rn, Sig , Door-	nal	C. A.	$egin{array}{ll} \operatorname{Fhom}_1 & \ldots & \operatorname{F}_1 & \ldots & \operatorname{F}_2 & \ldots & \operatorname{Fhom}_1 & \ldots & \operatorname$	Son L. R Tre	et al. lepass mblay
Licino.	11 01 01	unee sc	Inceser,	THULL	Tunar.	
Level, Level, Liftin	Dump Gravit	y ty ratns	Sidewa R. L. an	W. D. H. M	C. A. E J. Sey orris	Olson Berger ymour et al.
Light and Liquid	constr roof l-fuel b	uctlon, urner.l	Side wa	alk, flL. V	oor, V. Mi R. Ha	vanlt, ulford annali
Lock.					M. V	Vuolle
Locan Locan Locan Loom-	ng devi notive s notive s picker.	ce, Ke (sh-pan smoke-s	ytack	A	H. C. F. J W. V	Reiss heney Priest Vattie
Looms	temple , Cente	er-fork	stop-me	otion	N. Dofor	Cote
repl Lubric Machi	enishin; eator ne-tools	g	stop-mer for an angeable Eterbala delived delivers and for for formal formal for formal for formal formal for formal formal for formal for formal for	A. I . B. F drivi	E. Rh I. Tu	oades rnage nnec-
Machi Mail-b	ne-tools	, Cour cher ar	iterbala id deliv	ncing S. erer	deviar H. Bı	a, Jr. e for allard
Mail-b	ag cate	ther ar	d deliv	R. 'erer erer F	W. Ta	nuson Ilmer
Maltin Manur Marble	ig, Stee e-loade: e-shoote	ping g r er (2 p	rain for	rW A W.	. H. S. F. S	Prinz Stone Sweet
Marki: Mateh Match	ng-stak -rccept: es, Str	e icle iking-s	ats.) urface work, C	M. G. for .C. V	F. N F. P	onrse insuti
Mattre Measu	ess for ring an	river- id fillli	work, C ng appa nt nt, Ele	urtain I ratus.	1 G.	Hare
Measn Measu	ring in ring in	strume strume	nt. Ele	C. etrica	E. Ho l W. I	olmes Roller
Meat-o Mecha Mecha Metal	euring a nical n nical ir blooms	ipparat 10veme 10veme , etc., 2	nt, Ele ns nt nt Apparat J. G. ar ntus and MachirR.	L. Gr T. <i>I</i> .T. J. us for	imm A.C. Ham pilge	et al. Both mons ring.
Metal- Metal	mixing	appara	J. G. ar atus and Machin	nd G. d proc F. ne for	R. In ess E. C	shaw anda
turii Metall Milk.	ig ic tie a Desicca	ind rai	MachiiR. l-fasten ne solidW pats.) explosio	Dollin er.R. conte	ger e P. H nt of	et al. octer
Milk-p Milkin Milling	asteuriz g appai g-machi	zer (2 ratus	pats.) .E. J.	.D. T Kear	Swell C. N. '. Sha ney o	Gile rples t al.
Mines, in c Mosaic Vice	Preve oal ornan for app	nting ientatio plying.	explosion to ce F. ric	ons of H. ement J. W	coal Krus slabs asseri	-dust skopf , De- mann
Morrin	a mach	ino	D D	Donie	D. E	towe
Muffle: Musica Name-	r d instru register	iment,	Stringe F. hirt	R d.R. 2 W. 1	E. I. A. Wi Leuth	lkins esser
Needle Nut-lo Nut-lo	cholder. ek	S		J. I .M. (.D. S	A. Pa E. Ta C. Th . Pate	tham omas erson
Nnt-loc Nut-loc Nut-loc Nut-loc	2k 2k 2k	• • • • • • •	M	A. I. W. J. G. F	W. C Ingra A. H	durry tham arris
Oil-swi	itch	ne for	canarati	.C. D	. Has	skins
Oiling Optlea Optica	device, l squa r l test i n	Whee eg appl	l-spindl	eG. O. I R	Will Eppen Stra	iams stein nubel
		_				

Ordnance firing-gear (2 pats.)	\$
Ore-granulatorJ. G. Kirksey	,
Ores, Magnetically separating. C. Q. Payne	Ş
ran, and where	
Paper and the like reeling apparatus W. Kelly Paper, Machine for making corrngated A. Pacyna Paper Machine, for making double faced corrugated A. Pacyna Parcel collecting and distributing system. M. C. Schwab Pavement, Composite H. G. Jennison Peanut-whipper A. W. Poole Pen, Fountain R. F. VanWinkle Peneil, Lead C. Kaiser Percussive tool, Power-operated C. H. Haeseler	Ş
Paper, Machine for making corrngated	5
Paper Machine, for making double-faced	
corrugated	
Parcel collecting and distributing system.	1
Pavement, CompositeH. G. Jennison	
Pen. FountainR. F. VanWinkle	
Peneil, Lead	,
Percussive tool, Power-operated	
Photographic shutter	
or screens for colorJ. H. Christensen	;
Photography, Preparing screens for color	- 5
D. Du Hanron et al.	- 5
Distance IVI	- 5
Picker-aprons, Machine for repairing	,
Piles, Machine for stubbing	,
Pillars, Apparatus for manufacturing	Ş
Pipe attachment Swoker's II Flight	
Pipe-threading machineW. H. Millspangh	,
Pipe-wrench	,
Pictal and dram Spring air. I Joffrian	S
Pistol and drum, Spring airL. Jeffries Pit-mouths. Means for closing.	3
Pit-mouths, Means for closing	\$
Planer-head	
Planer-head Knives Holding device for	
B. D. Stevens	
Planing machine, WoodJ. Ermentrant Planking and decking clamp. II. B. Cutler Planter and check-rower, Automatic	:
Planter and check-rower, Automatic	:
Planters Variable change-gear for	9
Planters, Variable change-gear for	
Plow	3
Plow-point	
Plumbing-fixthre	3
Potash salts from feldspar, Obtaining	:
Potato-cutterF. J. Brumbly et al.	9
Power device	
T. R. Ryszka	:
Pressure test-gage Pocket F Schubert	
Protector-inserting machineG. A. Ambler	,
Pull-strapF. B. Kennedy PnmpR. Stnebck	
Pump, Deep-wellP. J. Gildea	
Pump-rod equalizerR. H. Johnson	-
Pumps, Automatic suction by-pass for	
Pumping-jackA. Peercy et al.	3
Quick-acting wrench	:
Radiator-cap	:
Rail-bond	3
Rail-fastener	
Rail-jointJ. W. Stephenson	,
Rail-joint supportJ. M. Loffland	- 5
Rails, Bonding	
Railway applianceW. J. McDermott	,
Railway-joint	,
Railway-joint,	
creep of	,
Railway-switch, Automatic F. L. Bille	
Railway-tie	,
Planters, Variable change-gear for	
Railway-tie and rail-fastening, Metallie	
Pailway tio Motal (2 pats) W. Stephenson	,
J. W. Stephenson	,
Railway-trackA. L. Plimpton	,
J. N. Tomlinson	,
Razor. H. J. Miller Razor. Safety- T. Sofrin	,
Razor-stropping machineA. Fornander	,
Reamer	
Reciprocating and rotary press	,
RefrigeratorS. T. Baer	
Razor. H. J. Miller Razor. Safety- T. Sofrin Razor-stropping machine. A. Fornander Reamer. W. J. Smith Reamer. H. F. Mussler Reciprocating and rotary press	,
Reversing device for geared travelers	
Reversing device for geared travelers J. B. Howe Revolvers, Barrel-eatch for II. M. Kolb Rewinding mechanism. W. Hess, Jr. Rim, Removable. E. J. Bushey Riveting-machines, Rivet and bur feeding mechanism for W. Baker Rock-drill. T. E. Adams Rod-puller G. L. Horn Rotary bit, Self-adjusting C. E. Frederickson Rotary engine G. B. Dunbar Rotary engine T. G. McGouigle Rotary steam-engine C. Pence	,
Rewinding mechanismW. Hess, Jr. Rim, Removable	,
Riveting-machines, Rivet and bur feeding	,
meenanism for	,
Rod-puller	
	,
Rotary engine	
Rotary steam-engine	,
Safety device. J. C. Meloon Sand-conveying annaratus R E Ham	,
Rotary steam-engine	
metal side plates for A. Johnston	
metal side plates for	1
Sash-pulley easings, Press for making side	1
metal side plates forA. Johnston Sash-pulley casings, Press for making side plates forA. Johnston Sash-suspension deviceM. Dobson	1

Sash-weight die
Saw-set
Saw-set. J. W. Oliver Saw-set. M. A. Beard Sawmill-carriages, Offsetting device for J. C. Rennie Sawmill set-works. W. H. Trout Scale. L. Jaenichen Scale, Farm-wagon. H. L. Graves Screens, Combined corner-brace and hinge for. R. L. Kirk Screw-press, Friction-driven. L. Schull Seal, Air. F. W. Krogh Seal, Press-fa-tenable. E. J. Brooks Sealing-machine. D. McAusliu
Screw-press, Friction-driven L. Schull Seal, Air. F. W. Krogh Seal, Press-fastenable E. J. Brooks Sealing-machine D. McAusliu Seat-clip G. F. Danielsou Sewing-machine folding and cording attachment A. Laubscher Sewing-machine tension mechanism F. S. Woodhead Shade and curtain bracket J. W. Winkleman Shade and curtain holder A. Bloom Shearing-machine J. F. Leake Shears E. S. Piper
Shade and curtain bracket
Shade and curtain holder . A. Bloom Shearing-machine . H. Kraut Shearing-machine . J. F. Leake Shears . E. S. Piper Sheet-metal-separating machine . A. Kent Shoe . M. Liberman Shoe-nailing-machine feeding device
Sign-displaying indicatorH. G. Fisher Signaling apparatus, MilitaryB. R. Dietz Silk cleaning and twisting machine
Signaling apparatus, MilitaryB. R. Dietz Silk cleaning and twisting machine G. E. Sly Skylights, Cellular sun-ray intercepter for. J. W. Hntton Slide-boltF. Neblung Slimer, SpiralJ. W. Pinder SmeltingJ. W. Nesmith Smelting apparatus, OreJ. W. Nesmith Smelting apparatus, OreJ. W. Nesmith Smoke and ventilating shaft, Combined F. Schofer Snap-hookL. L. and H. Zimmer Sole-protector for boots and shoes C. Futterknecht et al. Sound recording and reproducing machine D. H. Haywood Sound-reproducing or sound-recording ma- chineG. H. Underhill
Snap-hook. L. L. and H. Zimmer Sole-protector for boots and shoes
D. H. Haywood Sound-reproducing or sound-recording ma- chine
Stanchion, CattleW. Maude Steam-generatorA. Wallerstein Steam-generator, ElectricC. E. Griffing Steam-trapF. A. Littlefield
Steering engine, combined steam and hand E. C. Schoen Stirrnp, Safety————————————————————————————————————
Storage-tank, Metal. J. D. Harry Store-fixture E. McClure Stovepipe-thimble G. L. Mansell Straw-dispensing machine. M. and J. A. Kormau Stuffing-box, Propeller-shaft C. B. Adams Substation-selector H. O. Rugh Suction-roll W. H. Millspaugh Surgical instrument W. W. Stewart Surveying and cruising instrument. J. Barbow Swing A. F. Ewart et al. Swivel connection or coupling A. T. Booth Synchronous machines, Control of
SwingA. F. Ewart et al. Swivel connection or coupling. A. T. Booth Synchronous machines, Control of H. W. Peck
Swivel connection or coupling. A. T. Booth Synchronous machines, Control of II. W. Peck Table lock, Extension
Telegraphy, Space. I. De Forest Telephone system. H. P. Clausen
Telephone systems, Com-confector for R. R. Mohn et al. Telephones, Memorandum and recording device for use with U. G. Cave Thread-protector P. J. Shrum Tile-machine L. Rotarius Tire-alarm L. E. Cowey Tire antislipping device, Resilient
Tire-armoi J. M. Barnett Tire-ehain A. B. Saliger Tire-protector J. F. Collins Tire, Resilient vehicle W. H. Clark Tires, Repairing-patch and repairing material for pneumatic, F. Woodgates et al.
Tongs, Log-loading
Tire, Resilient vehicle
Trip-block F. P. Sneed Trolley, Safety- G. Sitka Trnck, Tongue- C. A. A. Rand Tube-machine J. R. Harbeck Tube-making machine B. W. Tucker Tug clip, Hame- J. J. Creedon Turbine, Steam- W. H. Lieber Turbine, Steam- J. F. M. Patitz Turbine, Steam- C. F. Barth Turpontine griperor J. T. Paker
Turbine, SteamJ. F. M. Patitz Turbine, SteamC. F. Barth Turpentine-gathererL. T. Baker Type-writer paper-carriage-feed mechan- isuT. E. Buschmann

Type-writer platen-carriageG. F. Rose Tpye-writing machineW. J. Kanffman Type-writing-machine feeding attachments. II. M. Bnrch UmbrellaH. J. Finerty UmbrellaH. Miller Umbrella, FoldingE. A. Lundberg Unloading deviceH. W. Cheney UrnS. Mayer Vacuum-cleanerJ. W. Smith Vacuum-tubes, Mechanical joint for Unloading deviceD. M. Moore Valve Agayre
Vacuum-chees, Mechanical joint for. D. M. Moore Valve. C. A. Sayre Valve. II. K. Holsman Valve. W. S. Bellows Valve. T. R. Stanley Valve-closing mechanism. H. B. Morrill Valve-closing mechanism. H. B. Morrill Valve-gear Grasolene-engines, Generator F. L. Swamberg Valve-gear for thid-pressure engines. Valve-gear for thid-pressure engines. A. M. Stanley Valve-grinding tool C. A. Herle Vapor-burner B. Appel et al. Vehicle-brake L. H. Goodwin Vehicle-top bow-separator A. Loomis Vehicle-wheel T. B. Jeffery Vehicles, Riding attachment for H. G. McCool Vending apparatus E. X. Somers Vending-machine, Coin-controlled H. Francis Vibrator, Magnetic F. V. Smith Voting-machine H. C. H. Cooper Voting-machine H. J. V. Prior Voting-machine H. J. J. M. Dean Voting-machine H. C. H. Cooper Voting-machine H. J. J. Mulhall Voting-machine J. C. Ross Water and gas meter J. J. Mulhall Water-page R. J. Nault Water-heater P. C. Esley Water heater or boiler E. C. Hock Wave and tide motor N. S. E. C. Hock Wave and tide motor N. S. E. E. C. Hock Water-lift and air-compressor R. Y. Bovee Wave and tide motor N. S. E. E. C. Hock Water-lift and air-compressor R. Y. Bovee Wave and tide motor N. S. E. E. C. Hock Water-lift and air-compressor R. Y. Bovee Wave and tide motor N. S. E. E. C. Hock Water-lift and air-compressor R. Y. Bovee Wave and tide motor N. S. E. E. C. Hock Water-lift and air-compressor R. Y. Bovee Wave and tide motor N. S. E. E. C. Hock Water-lift and air-compressor R. Y. Bovee Wave and tide motor N. S. E. E. C. Hock Water-lift and air-compressor R. Y. Bovee Wave and tide motor N. S. E. E. C. Hock Water-lift and air-compressor R. Y. Bovee Wave and tide motor N. S. E. E. C. Hock Water-lift and air-compressor R. Y. Bovee Wave and tide motor N. S. E. E. C. Hock Water-lift and air-compressor R. Y. Bovee Wave and tide motor N. S. E. E. C. Hock Water-lift and air-compressor R. Y. Bovee Wave and tide motor N.
Valve-gear D. P. Davies Valve-gear for fluid-pressure engines A. M. Stanley Valve-griuding tool. C. A. Herle Vapor-burner B. Appel et al. Vehicle-brake L. H. Goodwin
Vehicles, Riding attachment for
Voting-machine. S. Loe Voting-machine. J. V. Prior Voting-machine. H. C. H. Cooper Voting-machine (4 pats.) J. H. Dean Voting-machine. F. Keiper Voting-machine. W. J. Lausterer Voting-machine. A. J. Gillespie
Washboiler
Wave and tide motor
isun for demountableJ. W. Farnoff Wind-shieldJ. H. Sprague Wind-shieldR. M. Watkins
Windmill. F. Manning Window attachment. F. Kotzki Window-sereen, Loeking. A. O. Lockwood Window-ventilator. J. Steinhelper Window-ventilator. E. Esender Wire-straightening machine. M. W. Lewis Woodwork-polishing machine. A. Pnggel Wrench. W. J. Miller et al. Wrench. J. B. Allen Wrench. M. Courtney Zinc, vapor to liquid metal, Method of and apparatus for condensing. C. Thierry et al.
Issued June 20, 1911.

MECHANICAL PATENTS.

MECHANICAD TATENTS.	
Aerial propellerJ. O. Wrenu	- (
Air-brake coupling R A Winton	i
Air-brake coupling R. A. Winton Air-compressor R. Temple	- 2
Air-drying apparatusP. Wurth	- 7
Air-diying apparatus Winter or al	,
AirshipL. Winters et al. Aluminium nitrid, Manufacture of	
O. Serpek	,
American D. Dawbeld	
Amusement device. B. Berhold Animal-trap. II. P. Damsma Annealing-furnace. E. H. Holmes	(
Animal-trap	(
Annealing-furnaceE. H. Holmes	- (
Armature-bander, Power, A. J. Hunter Ash-pan O. G. Samuelson et al.	(
Ash-panO. G. Samuelson et al.	(
Automatic sprinkler	(
Automobile cranking deviceW. A. Long Automobile power-transmitting device	
Automobile power-transmitting device	- (
B. Tully	
Automobile running-gear	(
	(
Automobile-wheel with pneumatic and	- (
spring hub	(
Antomobiles, Electric lamplighting device	- (
Automobile power-transmitting device	(
Axiometer	- (
Axiometer. C. M. Haynes Bag. W. N. Hunter Bale-fie. E. Latham	- (
Bale-tieE. Latham	- d
Baling-press G. M. Washington Basket H. R. Garritson Basket, Automatic coal-shaft J. J. Nary	ò
Rasket H. R. Garritson	,
Pasket Antomatic coal-shaft J. J. Nary	- (
Bathing apparatus I F Rurko	- 7
Bearing Autifriction center-	- 7
Bathing apparatus. J. F. Burke Bearing, Autifriction center. E. S. Woods Bearing with looped cage, Roller-	- 2
Bearing with looned cage Roller-	- 2
	,
Bed and ladder, Combined	- (
I Assensult et al	- 2
J. Arsenault et al. Bed-pan cushiouM. A. L. Barrelle et al.	- 2
Bed, Sofa	- 7
Poor and recogning same. I. Wallarstein	- 2
Poor or ale Treating (2 pate)	- 2
Beer of arc, irraining (5 pags.)	- 2
Polls Proton of enomiting propositio	- 5
Bens, system of operating pneumatic	- 5
Dollar deine D. T. Lindhaud	- 5
Denomina Transfer formertal	- 1
heverages, freating termented	,
Bed, Sofa	1
Billder for (ransfer-cases, mes, etc., Loose-	,
leafE. Jay	1
Blower for boilersE. K. Standish	7
Blower for boilers. E. K. Standish Blower for boilers. T. S. Waller Boiler. V. MacKay Boiler and tube cleaner. R. W. Hamann	1
Boller	I
Boner and tube cleaner K. W. Hamann	J
Tabler nre-doxes. Retractory arch for foco-	
motive- C. B. Moore Book-holder. E. G. Dann	I
Book-holderE. G. Dann	1
Boring-machine gage)

Bottle-case, Metallic
Bottle-washer C. W. Hamann Box W. E. Reineke
Box press, Fruit-, S. E. and C. W. Maddox Braider-spool. F. Mossberg Brewing, Preparation for use in L. Wallerstein Brick-grapple L. Weber Brickmaking-machine J. McLaughliu Bridge L. R. Stranss
Brickmaking-machine. J. McLangblin Bridge. J. B. Strauss Broach. E. Slapak Brooder-heater. C. Miedel Brush, Fonntain- J. T. Coleman Brush-machine. W. N. Hunter Brush, Magazine tooth- J.H. Moran Brush, Sgreen-door fly- A. B. Paul Burner. F. A. Curtis Burners for fire-polishing, Forming: A. J. Sanford
Bruner. F. A. B. Paul Burner. F. A. Cartis Burners for fire-polishing, Forming. A. I. Sanford Burnishing-machine E. R. Williams et al.
Burners for fire-polishing, Forming: A. J. Sanford Burnishing-machine. E. R. Williams et al. Busheling-furrace, Automatic. S. McCloud Bushing. H. J. Gilbert Cake-hanger. F. B. McCullough Calculating-machine. F. C. Rinsche Calculating-machine. D. E. Felt Calculating machine, Time. J. K. Jones Calculating-machines, Full-stroke mechanism for. O. Thieme
Camera exposure-indicatorC. G. lves Camphor in shaped pieces, Producing trans- parentO, R. De Witt
Cane-crushing mills, Bearing for sugar W. Maxwell Car construction
W. J. Mack Car-underframe
fibrons materials
engines
Carter and rug fastenerJ. P. Williams Cart. KnockdownR. C. Rasmussen Carton-closing machineF. J. Heybach Carving and gaining machine
Casket J. H. Mowen Casting-molds. Method of and means for forming. A. F. Howe Cattle-guard. D. F. Ball Cellulose. Strengthening. X. Eschalier
Carding-machine condensing apparatus. Carpet and rug fastener. J. P. Williams Cart, Knoekdown. R. C. Rasmussen Carton-closing machine. F. J. Heybach Carving and gaining machine. Cash-register. R. G. Gaptill Cash-register. C. Trog Casket. J. H. Mowen Casting-molds. Method of and means for forming. A. F. Howe Cattle-guard. D. F. Ball Cellulose, Strengthening. X. Eschalier Chaing-shields. E. C. Knebler Chain, Conveyer. T. A. Coleman Chopper and disintegrator. M. Marrone Chuck, Bit-brace. A. F. Schade Cigar-lighter, Electric. R. W. Baker et al. Cigarette-papers, Device for feeding. Clock and watch. R. B. Hansell Clock, Electric. C. E. Mathiesen Clothes-hangers. Supporting device for. Clothes-line. W. F. Wolty Clutch. C. C. Rich Chitch mechanism. H. A. Waterman Coating objects with subdivided material. Apparatus for (2 pats.). F. F. Bradley Coffee substitutes, Apparatus for preparing. O. Gaebel Collapsible chair. J. Rosenberg Column, Expansible. W. L. Dillon Combination-wreneh. L. V. Aronson Concrete culvert. R. J. Burns Concrete products, Machine for the manufacture of F. F. Landis Concrete sidewalks, Knockdown metal form for H. M. Naugle Condenser. J. J. Hoppes Confection.
Clock and watch R. B. Hansell Clock, Electric C. E. Mathiesen Clothes-haugers, Supporting device for H. T. V. Perry Clothes-line W. F. Welty
Clutch
Collapsible chair. J. Roselliorg Column, Expansible. W. L. Dillon Combination-wreneh. L. V. Aronson Concentrating-table deck. F. Franz Concrete culvert. R. J. Burns Concrete products, Machine for the manu-
facture of F. F. Lundis Concrete sidewalks, Knockdown metal form for for H. M. Naugle Condenser J. J. Hoppes Confection A. J. Meier
Condenser. J. J. Hoppes Confection A. J. Meier Controller H. W. Cheney Conveyer S. D. Wright Cooking vessel, Electrical F. Bolling Cooling-can H. C. Steffy Cotton-chopper F. O. Swenson et al. Cotton-chopper and scraper W. D. Osbron Cotton cleaner, Lint- A. W. Washburn et al. Covering-roller C. Jass
Covering-roller
Culvert-mold A. J. Fox Currycomb M. H. Danner Currycomb E. Webster Curtain-pole G. W. Bevill Cuspidor P. F. Gatto
Cuspidor-holder, SanitaryP. H. Noonan Cuspidor, Sanitary pocketS. O'Sullivau Cut-ont, Meter-testingT. E. Murray Cutter-head for edgersW. G. Zimmerman Cycle-stands, Release forJ. H. Rapp
Inspensers, Loading-wire for traveler J. S. Drake
Display-box. F. Westerbeck Display, Window- H. Kempinski Displaying dolls and the like, Stand for E. M. Moore et al. Dock, Dry- H. W. Goodrich Door-check A. Danielson Door-check G. J. Winter
Door-check

Door crape-holder	H
Door crape-holder	11
movable	H
Drnm, Mixing	EI
Drnm, Mixing	II II
Tires and making the came (Proph authra.	H
cene. H. Wolff Dyestuff, Blue triphenylmethane	H
Edger	Н
Electric-couduit connection and coupling O. M. Neitzel	Ic Ic
Electric cut-out-hox T. E. Murray Electric heater T. E. Fogalsang	$-$ I ϵ
Electric ignition systems, Distributer for	I (
	Iı
Electric-lighted finder. F. L. Fitch Electric machine, Dynamo- W. P. Dandliker Electric meter. G. A. Scheeffer Electric motor. J. H. Pearce Electric switch. H. Fisher Electric switch. J. H. Champ Electric-wave transmission. J. H. Cuntz	11
Electric meter	I 1 I 1
Electric motorJ. H. Pearce	11
Electric switchJ. H. Champ	
Electric-wave transmission. J. H. Cuutz Electric wiring, Knob for. F. B. Bower Electrical condenser. A. K. Sloan, Jr.	Ιı
Electrical condenserA. K. Sloan, Jr. Electrical resistanceF. Bolling	Ιı
Electrolytic processR. J. McNitt	Į1
Electromagnets from alternating-current sources, Means for operating.G. M. Willis	.I.
Electrotypes and other printing-plates, Composite mounting-board for	1
	Ţ
Elevator. R. E. Snowden Elevator safety attachment. W. B. Thomas Elevator safety device. A. J. Bautz Elevator-shaft-door lock. A. A. Page Embossing-press. S. K. White Enamel, White. C. Rosenzweig Engine-crank. J. W. Bracken Engine-cranking device, Mechanical. E. and G. P. Hull	J
Elevator safety deviceA. J. Bautz Elevator-shaft-door lockA. A. Page	K K
Embossing-pressS. K. White	
Engine-crankJ. W. Bracken	К
Engine-cranking device, Mechanical F. and G. P. Hull	B
Engine etarting device Explosion-	L
Engine-starting device, Explosive	I.
Engines, Apparatus for electric ignition of	I.
large internal-combustionG. Honold	
gasJ. M. Rhett	I.
Engines, Ignition system for internal-com- bustlon (2 pats.)	L
Evaporating and concentrating apparatus	L
J. E. Dnnn Evaporator	I.
Evaporator. C. Mykolashek Expanding brake. E. F. Kelley Explosive compound and manufacturing the	I.
same	I.
Eyeglass-nonderH. J. Brennecke Eyeglass-mountingS. J. Clulee	I. I.
Fabric-opening deviceF. Chatfield	I.
Fastener C. Koch	1.
Feed-bagA. Gaul, 51. Fccd-water regulatorC. Brent	I.
Feed-nag. A. Gaul, Jr. Feed-water regulator. C. Brent Feeding appliance, Boiler- W. B. D. Ponninghaus Fence-clamp. J. A. Cocker Ferrochromium, Effecting reduction and	I.
Fence-clamp	I.
producing E. F. Price Flber-cuttling machine F. E. Keyes	1
Fiber-cutting machineF. E. Keyes Fiber in flat form, Machine for manufac-	Ι
Fiber in flat form, Machine for manufacturing bard	.7
Fibers from flax, hemp, etc., Producing textile	.)
File, rasp, or similar tool	7.
Eire-extingushing apparatus (2 pats.)	7
II. M. McCuslin	Ţ,
Fishing-tool, Overshot	. N
Flash-light apparatusC. P. Filson	
Flash-light apparatus F. Flash-light apparatus	3
Flying-machine	• '
Flying-machineJ. L. Walker Food compounds, Making fatty	
Formany Pont C II Parker	,
Frame construction	
Fuse-box P. J. MeDonald	_
Fuse-boxP. J. McDonald Game apparatusL. A. Miller	7
Game apparatus. L. A. Miller Garments, suspending-tab for P. Gallrein Gas-producer W. B. Chapman Gasolene-burner A. S. Freeman	2
Gasolene-burner	7
Gasolene-separator. J. Buhr Gasometer E. Hohmann Gear meehanism. Change- A. E. Sehmldt Gearing, Transmission- A. C. King et al.	2
Gear mechanism, ChangeA. E. Schmldt	,
Gearing, TransmissionA. C. King et al.	-
Clared frame for hotheds etc	Ŷ
Governor, Explosive-engine. E. E. Arnold Grain-binder cord-knotter. J. Boda	7
Grain-binder cord-knotterJ. Boda	1
Grain-hinder eord-knotter. J. Boua Grain cleaning and separating machine, Seed. S. D. Felsing Grater, Rotary. R. Golensky Gravel-screen. A. A. Regnier Grense-cup elosure. I. E. Du Bois Hammer, Foot-power. A. Walle Hammock, Integral fulled-valanee.	,
Grater, Rotary	
Grease-cup elosureI. E. Du Bois	
Hammock, Integral fulled-valanee	
Hommosk suspension means I E Palmer	-
Hammocks Suspension heads. I. I. Hammocks, Making fulled-valance. I. E. Palmer Harrow J. H. Anderson Harrow C. E. Forkner Harvester, Cane- J. E. Baster Harvester, Corn- H. B. Wyckoff	
HarrowJ. H. Anderson	
Harvester, CaneJ. E. Baster	
Harvester, CornH. B. Wyckoff HatD. Stern	
Hat. D. Stern Hat-pin M. T. Confrey Hat-pin protector. D. M. Watkins	
Hay-press. F. A. Ryther	
HeadlightR. D. and J. C. Ewen HeelU. Mahler	. (
Hat-pin protector. D. M. Watkins Hay-press. F. A. Ryther Headlight R. D. and J. C. Ewen Heel U. Mahler Heel, Detachable E. T. Benton, Jr. Heel for footwear S. Milano	
HlngeV. P. Warren	

Hinge-adjusting deviceH. C. Emrich Hoisting and conveying apparatus A. E. Norris
Hinge-adjusting deviceH. C. Emrich Hoisting and conveying apparatus A. E. Norris Hook-fastenerS. B. Casey Hoop-making machineM. I. Keagy HoseE. T. Greenfield Hose-bridgeJ. J. Armstrong Hose-conplingC. Hill Hose-marking apparatus, Rubber C. D. Garretson
Hose-bridgeJ. Armstrong Hose-couplingC. Hill Hose-marking apparatus, Rubber C. D. Garretson
Hose, Marking rubberC. D. Garretson Hose, Marking rubberC. D. Garretson Hub and axle-bearing, Wheel
Ice-cream freezer. B. Kunt Ice-cream freezer. R. Liddell Ice-creeper. J. E. Gerry Ice-rest and water-cooler. W. F. Keyes Incandescent mantles, Mannfacture of. J. Visseaux
Incandescent mantles, Mannfacture of I. Visseaux Induction-motor E. R. Knight Insect-trap R. J. Russel
Induction-motor. E. R. Knight Insect-trap. R. J. Russel Internal-combustion engine. C. M. Garland Internal-combustion engine (2 pats.) H. F. Fullagar Iron and its alloys, Apparatus for manufac-
turing
Ironing-tableA. Sinding-Larsen H. E. Lewis Jar holder FruitA. Schaumburg
Jig. C. A. Duncan Jig for holding articles during machining. J. H. Hertner et al. Journal-bearing. O. Schutt Jonrnal-boxes, Lubricant-reservoir for. C. Schutt
Johrnal-boxes, Lubricant-reservoir for J. L. Henderson Kinetoscope
Knitting machines, Giove-IngerG. H. Gilbert et al. Knitting machines, Pattern mechanism for gloveG. H. Gilbert et al.
Jonrnal-boxes, Lubricant-reservoir for J. L. Henderson Kinetoscope
Lamp socket, IncandescentE. M. Kemp
Latch. E. B. Gifford Latch-lock, Automatic latch-and-knob-lock- ing. W. H. Thomas Lucatory Framedod iron A. S. Hamilin
Latch. Latch-lock, Automatic latch-and-knob-lock-ing. W. H. Thomas Lavatory, Enameled-iron. A. S. Hamlin Lead stack. White
paratus
Lightning-rod-top braceW. C. Shinn LockW. E. Sparks et al.
Locomotive G. B. Rait Locomotive ash-pan G. Maurer Logging-bunk J. N. Peterson Loom H. Cote et al.
Locomotive ash-pan. G. Maurer Logging-bunk. J. N. Peterson Loom. H. Cote et al. luggage-carrier. J. R. Coyle Lunch-receptacle. S. E. Wilson Lupulin and making same, Preparation containing. L. Wallerstein Mail-bag catcher and deliverer.
Mail-bag holder. E. Woodworth et al. Mail-bay II E. Chleborad
Mail-earrierW. E. Malcolm Mail deliverer and receiver, Railway E. C. Smith Manure from raw phosphates, Manufactur- ingW. Palmacr
Marcipan, Preserving, R. Moll et al. Match-box M. Petrocochino
Measuring apparatusJ. Stevens Meat stamping or marking device W. T. Conway Meat stamping or marking device
A. D. Melvin Memorandum-slip clip. A. J. Keck Metallic tie and fastener. J. K. Mackeral et al. Micrometer cutting-gage or stop device for
Micrometer cutting-gage or stop device for lathes, etc. W. Runge Milk-eooler. S. Shapiro Milking-machine L. D. Peik et al.
Milling-machine attachmentE. J. Kearney et al.
Mine. Floating. A. Lernet Mineral-bearing matter from streams of water. Apparatus for separating. J. V. Coleman Mixing-machine. F. I. Smith
Mixing-machine. F. I. Smith Mortise-lock. H. G. Voight Mothproof garment-bag. G. Rottman Motor-controller. W. C. Stevens Mower finger-bars, Treating. Mowers, Cutting apparatus for. J. W. Pridmore Mowing-machine. W. Webber Mowing-machine cutter-bars. Safety-check for. N. Rogers Music-sheets and trackers, Device for ad- justing the relation between Music-turner. C. H. Gowdey Musical instrument. C. C. Hill
Mowers, Cutting apparatus for
Mowing-machine cutter-bars. Safety-check for N. Rogers Music-sheets and trackers, Device for ad-
Musical instrument
Musical instrument
Nitrogen compounds, Making. A. R. Frank Nut-lock. W. F. Kenney Nut-lock. E. P. Anderson Nut-lock. W. L. Loon
Nut-lock W. L. Loop Nuts, Bleaching F. Hayes et al. Office and door indicator L. E. Webster Oil burner, CrudeJ. C. F. Woodworth Oiler, Automatic flange J. L. Williams Oiling device D. F. Hervey Ore-concentrator F. Franz Ore-cooler T. Edwards
Oiling device

Ore-separator. J. Stanley Ozonator. L. Goldberg Pack-carrier F. C. Harriman Pack-sling. F. C. Harriman Packaging-machine M. F. Anderson	
Dre-separator. J. Stanley Dzonator. L. Goldberg Pack-carrier. F. C. Harriman Pack-sling. F. C. Harriman Packaging-machine. M. F. Anderson Padlock, Combination D. L. Lawson Paper and preparing the same, Cleaning "Paper-bag machine. W. A. Lorenz Paper-bag machine. J. Merritt Paper-cutting-machine attachment. "Paper-drier. A. C. Rice Paper-making. W. H. Howes Pencil-sharpener. A. Bertram	
Paper-criting-machine attachmentO. Larsen Paper-dvierA. C. Rice Paper-makingW. H. Howes	
Perforating-machine G. A. Housam Phonograph-record cabinet P. Scholl Phosphate. Making di-ammonium	
Phonograph-record cabinetP. Scholl Phosphate. Making di-ammonium S. Peacock Phosphorons pentoxid and titanium com-	
Phosphate, Making di-ammonium. S. Peacock Phosphorons pentoxid and titanium compounds, Making. Piano-action. Piano-bench. J. P. Caulfield Pile fabric, Woven. W. V. Lowe Piling, Sectional or sheet. J. M. Rafter Pilot-light valve. L. P. Dickey Pipe-conpling, Pneumatic. J. E. Gleason Pipe-joint expansion. J. Kocnig Pipe-testing plng. Soil- Pipe-testing plng. Soil- Pipe-wrench. J. Pedery	
Piling, Sectional or sheet J. M. Rafter Pilot-light valve L. P. Dickey Pipo-coupling, Pneumatic J. E. Gleason Pipo-int expansion J. Kogniz	
Pipe-testing plng Soil- P. J. Rich Cipe-wrench J. Pedery Plant-protector J. Bolt Pliers J. L. Young	
Plant-protector. J. Pedery Plant-protector. J. Bolt Pliers. J. L. Young Plow attachment. W. W. Beeman et al. Plow-lay A. G. Leave Plumb-bob. C. Joice Plumb-bob. H. D. Airesman Pneumatic-despatch-tube apparatus. L. G. Bartlett Popcorn-parcher. W. D. Baird Porous structures, Treatment of J. C. Moore Precious metals from associated materials, Apparatus for separating F. H. Prentiss Press. H. Antoine Press connection C. J. Nelson Pressure chamber, Variable. H. P. Tank Printing-machine, Antomatic J. T. Corfield Printing-machine web-roll support. E. W. Cooper Printing press, Multicolor. A. M. Clark Projectile, Explosive F. I. Du Pont Projectile for hand-firearms. W. Thilo Propelling-wheel. J. Plewes Pulverizing-roller. C. Jass Pumb. W. R. Chamberlain	
Popcorn-parcher. W. D. Baird Porous structures, Treatment of	
Precious metals from associated materials, Apparatus for separating. F. H. Prentiss Press H. Antoine Press connection C. I. Nelson	
Pressure chamber, VariableH. P. Tank Printing-machine, Antomatic.J. T. Corfield Printing-machine web-roll supportE. W. Cooper	
Printing press, MulticolorA. M. Clark ProjectileH. H. Hendrix Projectile, ExplosiveF. I. Du Pont Projectile for hand-firearmsW. Thilo	
Propelling-wheel. J. Plewes Pulverizing-roller. C. Jass Pump. W. R. Chamberlain Pump. Distributing- F. W. Knott Pump. Power- J. H. Sutter Pumps, Means for priming centrifugal.	
Pail-anchor J M Scott	
Rail-bond. G. W. Knox Rail-chair N. S. Babcock Rail-fastening means. A. B. Moon et al. Rail-joint A. T. Eickmeyer Rail-joint, Insulated B. G. Braine	
Rail-joint, Insulated. B. G. Braine Rail-joint, Insulated. C. J. Buck Railway-ecossing signal. P. J. Russell Railway-rail fastening. A. C. Candland	
Rail-joint, Insulated. B. G. Braine Rail-joint, Insulated. C. J. Buck Railway-crossing signal. P. J. Russell Railway-rail fastening. A. C. Candland Railway-spike. T. Wakefield Railway-switch. E. R. Hanna Railway-switch, Safety. J. A. Call Railway-tie. H. F. Gorsuch Railway-tie. O. N. Kelly Rammer, Power- F. W. Hudson Rauge, Gas- W. N. Goldhamer Ratchet device. M. Luoma	
Rammer, Power- F. W. Hudson Range, Gas- W. N. Goldhamer Ratchet device M. Luoma Recentuele-closure S. Reiss	
Receptacle-closure. S. Reiss Receptacle holding and carrying device. S. Volz Receptacles, Manufacturing W. R. Comings Reflector E. W. Utzler Refrigerator C. D. Stoll Ribbon-cutter W. C. Jaegle Riding-habit I. Kleinberger Rock-drill valve mechanism, F. C. Loomis Roost Chicken A. Stombaugh Rotary engine W. H. Weddington Rotary engine F. W. Ferguson Rotary engine F. W. Ferguson Rotary switch W. E. Dow Rules, Magnifier for slide-W. L. E. Keuffel Sandpapering-machine W. S. Kelley Saw-guide W. H. Trout Saw-set J. R. Flaherty Sawing logs, Automatic centering device for . C. L. Wood	
Refrigerator. C. D. Stoll Ribbon-cutter. W. C. Jaegle Riding-habit. I. Kleinberger Rock-drill valve mechanism. F. C. Loomis	
Roost Chicken A. Stombaugh Rotary engine W. H. Weddington Rotary engine K. L. Power Rotary engine F. W. Ferguson	
Rotary switch	
Saw-set. J. K. Flaherty Sawing logs, Automatic centering device for C. L. Wood Scale, Weighing J. W. Spurlock Scow, Tilting dumping G. V. Mitchell Screw-threads, Apparatus for cutting inter-	
Sooraw H C Renner	
Sewer-pipe. S. MeAdoo Sewing-machine attachment. T. A. Teate Sewing-machine gage. S. A. Lyons Sewing-machine, Reciprocating-shuttle J. O. Huffman et al.	
Sewing-machine attachment. T. A. Teate Sewing-machine gage. S. A. Lyons Sewing-machine, Reciprocating-shuttle J. O. Huffman et al. Sewing machines, Presser-foot mechanism for eyelet. D. Noble Shaft-forming apparatus, Vehicle. G. A. Lambert Shaving-cup. H. W. Montgomery Sheet-dividing apparatus. B. F. Upham Sheet-metal plates, Machine for joining or seaming. F. E. Adams Shock-absorber. H. J. Jorgensen Shocking-machine. J. McLeod Shoe or edge wetter, Automatic.	
Shaving-cup	
Shock-absorber H. J. Jorgensen Shocking-machine J. McLeod Shoe or edge wetter, Automatic A. West et al.	
Shoe-suppert	
Skimmer, SyrupA. J. Harden Slicing machine, FruitN. K. Smythe Smoke-consuming furnaceB. F. Brady Smokers' articles, Mouthpiece for	
Shocking-machine. J. McLeod Shoe or edge wetter, Automatic. A. West et al. Shoe-suppert. A. J. Kroll Shoemaker's tool. D. Zemborski Shotgun. Double-barreled. T. C. Johnson Signaling apparatus, Selective. f. F. Manny Skate, Roller. J. Warner Skimmer, Syrup. A. J. Harden Slicing machine, Fruit- N. K. Smythe Smoke-consuming furnace. B. F. Brady Smokers' articles, Mouthpiece for. Snow disposal. C. Evans, Jr. Soil, Machine for packing subsurface. W. M. Fulton	

Soldering machine, Metal-plate
Sound recording and reproducing machineG. Jungren
Spark-plug indicator. A. R. Lamberson Sparking plug. E. Knhu
Soldering machine, Metal-plate
Spigot. R. and E. Rabiger Spike-puller. J. Adams Spinning-maching thread breaking device
Spinning or twisting machine thread-guide.
Spool-cabinet. J. C. MacLagan Spring-wheel. H. C. Kennedy
Stacker attachment, HayE. B. Shields et al. Stair-rails, System of laying out
F. Q. Hartmann Spinning or twisting machine thread-guide. J. E. Prest Spool-cabinet. J. C. MacLagan Spring-wheel. H. C. Kennedy Stacker attachment, Hay. E. B. Shields et al. Stair-rails, System of laying out. C. C. Grant Stamp, Hand- Stamp, Hand- Stamp-mill H. S. Folger Stamp-mill H. Bolthoff
Stamp-mill cam J. W. Pinder Stamp-mill cam H. Bolthoff Staple-strip E. H. Hotchkiss Steam-boiler N. A. Uren, Jr. Steam-generator C. C. Worthington Steamship D. M. Pfautz Stencil sheet, process, etc. W. G. Fuerth Stereotype-plate-casting apparatus H. F. Bechman
Steam-soner C. C. Worthington- Steamship D. M. Pfautz
Stencil slicet, process, etcW. G. Fuerth Stereotype-plate-casting apparatusH. F. Beehman
Store-front and show-window structure D. J. Murnane Stove, Portable
Structural material, Manufacture of
Structural material, Manufacture of. C. E. Duncan et al. Structural material, Manufacture of. J. Fawell Stnd-gnard. E. P. Happich et al. Sugar-washing machine. A. Plecher et al. Suit-case lock. J. Roche Surgical appliance. J. E. Heyser Swing, Lawn- P. H. Murray Switch-clip. G. R. Halden
Suit-case lockJ. Roche Surgical applianceJ. E. Heyser
Swing, Lawn
Switch-operating mechanism, Automatic J. C. Warren Tack-pulling toolJ. B. Hadaway Target-finder, IllnminatedH. J. Hegwer Teeth, Backing-forming instrument for
Teeth, Backing-forming instrument for J. S. McDonald Telephone-support K. B. Miller et al.
Teeth, Backing-forming instrument for J. S. McDonald Telephone-supportK. B. Miller et al. Telephone systemJ. B. Stemm et al. Telephone systems, Signaling device for A. J. Dunton Thermometer and ventilator, Oven H. C. Ferbrache Thill-couplingR. S. Roberts Threshing-machine, feed-hopper F. F. Landis Ticket-indicator box and cash-drawer O. Grimm
Thermometer and ventilator, Oven
Thill-couplingR. S. Roberts Threshing-machine, feed-hopper F. F. Landis
Ticket-indicator box and cash-drawer O. Grimm Ticket, TransferF. W. Shean
Tile and rail-securing means
Ticket-indicator box and cash-drawer O. Grimm Ticket, Transfer
Tire, Cushion. G. H. Matteson Tire, Resilient. G. W. Rowell
Tire, VehicleJ. Whlour Tires, Core for molding. F. S. Stiles et al.
Tire, Restlicht G. W. Rowell Tire, Saver L. Willour Tire, Vchicle J. Thomsen Tires, Core for molding F. S. Stiles et al. Tires, Valve-base for pneumatic G. W. Greene Tissues, Machine for the maunfacture of artificial C. Raj
Tobacco-pipe. H. Hamper
Tool-holder
Traction-motor
Trigging device H. Platt Trimming F. A. Byram
Trolley-pole coupling, Detachanie
Trolley-whres of electric rallways, Catenary suspension device forW. A. McCallum
Truck, CarJ. J. Byers Truck side frame (2 pats.)
Truck, TippingK. Malcher Truck, Vineyard and orchardJ. Porteus
Tool-holder. H. R. Huling Tool-holder. G. Johansen Tool, Pneumatic. G. H. Gilman Traction-motor. J. B. Heverling Train-recording apparatns. F. A. Pierce Trap. H. A. Stilson Trigging device. H. Platt Trimming. F. A. Byram Trolley-pole eoupling, Detaehahle. O. W. Smlth Trolley-whre-splicing shield. G. Wiedenbeck Trolley-whres of electric rallways, Catenary snspension device for . W. A. McCallum Truck, Car- J. J. Byers Truck side frame (2 pats.) A. O. Buckius, Jr. Trnck, Tipping. K. Malcher Truck, Vineyard and orchard. J. Porteus Trucks, Tension device for car. C. H. Knobbs Trnnks, Folding leg for . R. C. Baln Truss. P. S. Haehn Tube-bending apparatns. G. H. Reynolds Tnbe-boring machine. J. Rowe Turbine, Elastic-fluid. G. WestInghonse Turbine, Explosive-gas A. Patschke Tnrbine, Steam- A. Barbezat Type-writing ribhon mechanism. G. A. Greenwood
Truss. P. S. Haehn Tube-bending apparatus. G. H. Reynolds Tube-boring machine. J. Rowe
Turbine, Elastic-fluid G. Westinghouse Turbine, Explosive-gas A. Patschke Turbine, Starm
Type-writing ribbon mechanism
Type-writing machine (2 pats.). C. B. Yaw Type-writing machine G. A. Greenwood Type-writing machine G. A. Greenwood G. B. Yaw
Type-writing machine (2 pats.). C. B. Taw Unloading device. E. S. Aeling Vacuum cleaner apparatus. B. W. Jinik
Valve
Type-writing ribhon mechanism
varve, Shut-off
Valve-spring-compressing device
Vehicle storm-apronO. P. Fritchle Vending-machineG. R. Hammond Vending machine. Coln-controlled tleket
Vessel, Freight
Vestibule storm-shieldC. F. Wenslnger

Vestibnie doors and traps, Device for oper-
atlngJ. L. Miller et al.
Voting-machine C. H. Ocumpangh
Voting-machine interlocking device
Voting-machine interlocking device
Waffle-iron
Wagon-body linlingT. L. Steffen
WashbenchF. Chaussee
Washbench F. Chaussee Washing-machine W. J. Thompson
Watch-dial-fastener
Water-heaterM. K. and A. M. Heuderson
Water-softening apparatus.D. W. Patterson
Water-tube boilerW. D. Chester et al.
Weather-boarding tool
Weight motor, MultipleJ. S. Maxfield
Weight motor, MultipleJ. S. Maxfield Welding chain-linksB. Rappos
Well-casing placerJ. Commetti
Well-drilling apparatusA. G. Collins
Whifffletree-hook and trace-fastencr
A. Roop
Winding-machine W. E. Clookie
Window, Sliding
Wire-drawing blockP. P. Monfils
Wire plug Multiple. H. Hertzberg et al.
Wood-reducing apparatus
B. R. and M. J. Lyster
Work-holderA. J. Anderson et al.
WrenchE. Furrh
Wrench
WrenchJ. A. Borland
HICHCH
Icaned June 97 1911

Issued June 27, 1911.

MECHANICAL PATENTS. Alnminium and recovering aluminium therefrom, Making fusible compounds of.

L. R. Keogh Making fusible compounds of.

L. R. Keogh L. R. Keogh L. R. Keogh Ammunition hoisting and loading apparatus for orduance (2 pats.) A. T. Dawson et al. Animal-trap.

J. K. Harding Armor-plate, Making.

L. H. Bowman Armor-plates, Making.

S. S. Wales Ash-pan.

R. B. Kendig Auger cutter head, Earth-boring.

P. A. Bonchet Automobile-heater.

C. S. Pelton Automobile sleigh.

L. Norman Automobiles, Tail-light and traffic-signal for.

G. A. Robinson et al. Axles of farming-machines, Boxing for.

Bag-holder.

Bag-holder.

Bag-holder.

Bashet-blb frame.

Bashet-blb frame.

Bass-reel.

H. Kenward Bathing device, Portable.

H. Kenward Battery regulator, Storage.

A. A. Tirrill Beam construction, Trussed.

J. Hoffman Bearing, Ball
Bearing for indicator-shafts.

J. N. Perkins Bearing for indicator-shafts.

J. W. Estes Bearing, Lubricated.

P. S. Swan Bearing, Roller
Bedstead.

J. Penko Bedstead and trunk, Combination. Bearing, Libricated. P. S. Swan
Bearing, Roller- O. F. Zahn
Bearing, Thrust- W. M. Coffman
Bedstead. J. Penko
Bedstead. J. Penko
Bedstead and trunk, Combination.

S. L. Sisti
Bell-ringing apparatus. C. Stamberger
Belt-loop. M. J. Bracke
Belt or apron guide. C. H. Mattice
Belts, Mannfacture of hollow safetyBelts, Mannfacture of hollow safetyBelts, Mannfacture of hollow safetyBevel, protractor, and rnle, Combined.

J. M. Bragg
Bevel, protractor, and rnle, Combined.

J. J. La Follette
Beverage and manufacturing same, Nourishing alcoholic. S. Bendle et al.
Block structure, Artificial E. F. Viani
Blower. J. J. Stocker
Boiler and superheater. G. W. Wade
Boiler-finnace, Smokeless. J. Cook
Boiler water-level recording and indicating
device, Steam- J. E. Vannatter
Book, Note- W. J. Lundy
Bookbinding. W. S. Proudfit, Jr.
Bowling-pin spotter. F. Hughes
Brake-shoe. J. J. Kinzer
Breathing-armor, Safety G. Poe
Brlek-machine E. F. Wege
Brlek-machine E. F. Wege
Brldle. O. Billicy
Brooder, Fireless. J. E. Stenzel
Brush-holder support. C. T. Crocker
Buckle. W. A. Holden
Building-walls, etc., Support for

Cake-coating machine. F. Ranchwetter
Calculating-machines, Shifting device for.

R. Burk
Caldron-cover. F. Baldwin et al.
Car-dlestick, Miner's H. D. Ruys
Cans, Means for capping and performing
other operations on L. C. Sharp
Carbrake-operating mechanism

C. W. Foster
Car brake-gear, Railway- H. M. Pflager
Car-brake-operating mechanism

R. H. Minich

Car-couplingJ. L. Fitzpatrick et al. Car. DumpB. C. McComas Car-end constructionF. F. Gaines Car-roof construction, Metallic.E. C. Covert Car-step, FoldableJ. S. Blake Car-steps, FoldingE. W. Lewis et al. Curs, Toilet mechanism for. A. L. Bower Carbonating apparatusG. L. Kennedy Cash-registerW. Sumner Cash-registerB. B. Wells CatamaranS. S. Yarrington Cigar-bunch shaping and holding device A. Gordon Circuit-breakerC. C. and I. F. Badeau Circuit-controlling switchC. H. Hill ClampR. E. Hess Clinometer, AeronanticalJ. Means Clip for use in stentering-machines
Car-end construction
Car-step, FoldableJ. S. Blake Car-steps, FoldingE. W. Lewis et al.
Cars, Tollet mechanism forA. L. Bower Carbonating apparatusG. L. Kennedy
Cash-registerB. B. Wells CatamaranS. S. Yarrington
Cigar-bunch shaping and holding device A. Gordon
Circuit-controlling switchC. H. Hill ClambR. E. Hess
Clinometer, AeronanticalJ. Means Clip for use in stentering-machines
Clock and time-interval transmitter, Electrically-controlled H. I. Aiken Clothes-sprinkler A. Gustaveson
Clothes-sprinklerA. Gustaveson Clutch, Double frictionP. Daimler
Clutch, Double frictionP. Daimler Clutch, FrictionP. Daimler Coffee, Preparation or treatment of (3)
Coffee, Preparation or treatment of (3 pats.). J. F. Meyer, Jr., et al. Collar-support. M. L. Allen Combination-lock. A. B. Smith Compound steam-engine. T. J. Gee
Compound steam-engineT. J. Gee Compression engine, Changeable
Compression engine, Changeable
Control Serveyless suring H Wilhelm
Connecting articles to be transported to a traveling rope or chain with bosses, Ap-
Container-body-forming machine
Corn-ord W E KHILZ
Counting apparatus. R. Tojbin Cover, Clean-ont. J. E. Costa Cover-fasteuer. D. Nadeau
Crane, Overhead. C. L. Taylor Crank, Automatic locking. C. C. Rittenhouse Cultivator. J. Harper
Cultivator. J. Harper Cultivator. J. L. Bnrton Cultivator. Corn. W. Parkhurst Culvert, Metallic. W. J. Thorsby Curtain attachment, Train-vestibule. E. F. Hartshorn Curtain-support. W. H. Edsall Davenport, Folding. G. W. Henry Delivery mechanism. W. Scott Dental apparatus. C. F. Garretson Desk, School. J. Andersen et al. Desk, School. J. Andersen et al. Desk, School. J. Andersen et al. Desk, School. J. C. F. Garretson Desk, School. J. C. F. Garretson Desk, School. J. C. F. Garretson Desk, School. J. Andersen et al. Desk, School. J. C. G. F. Garretson Desk, School. J. C. G. G. Fink Distillation of metals, Fractional. C. G. Fink
Cultivator, CornW. Parkhurst Culvert, MetallicW. J. Thorsby
Curtain attachment, Train-vestibilities. E. F. Hartshorn Curtain-support. W. II. Edsall
Davenport, Folding. G. W. Henry Delivery mechanism. W. Scott
Dental apparatusC. F. Garretson Desk, SchoolJ. Andersen et al.
Detonator
Distillation of alcoholic liquidsE. Guillaume
Distillation of metals, Fractional
Door-lock and closer E. P. Golden Door-lock F. B. Stephenson
Distillation of alcoholic liquids. E. Guillaume Distillation of metals, Fractional C. G. Fink Door check and closer. R. E. Adam Door-hanger. E. P. Golden Door-lock. F. B. Stephenson Donche-pan attachment. N. E. Betsworth Drawing instrument. T. K. Piggott Dredging apparatus, Hydraulie. F. H. Gridley Driving-wheel J. B. Wiard Dust-collector. Multitubular. J. Peter Dust-collector. Multitubular. J. Peter Dust-pan and broom-snpport, Combined. O. T. Hutchison Dye of the anthraquinone series, Snlfnrized vat. W. Herzberg et al. Dye, Olive-gray vat. W. Mieg Dyes of the anthracene series, Making acid. M. Hjinsky Dyeing. F. Binder Dyeing apparatus. T. H. Daniels Dyeing-machine. J. M. Payne Dynamos from variable and non-variable sources of power, Driving. C. D. Haskins Egg-tester. R. A. Davls Ejectric apparatus. Static protector for va- por. J. L. R. Hayden Electric apparatus. Vapor. W. F. Sneed Electric apparatus. Vapor. W. F. Sneed Electric eables and like purposes, Flexible protector for E. L. Pease Electric-circuit switch. G. Wright Electric henter. A. Carpenter Electric interlocking systems. Return-indi- cation device for. F. B. Corey Electric-light telltale. J. F. Key Electric machine, Dynamo. F. A. Johnson Electric machine, Dynamo. F. A. Johnson Electric machine, Dynamo. F. A. Edwards Electric machine, Dynamo. E. A. Edwards Electric machine, Dynamo. E. A. Edwards Electric machines, Magnetic shield for. W. C. Fish Electric switch, Oscillating. G. E. Stevens Electrical conductor. H. Geisenhoner et al. Electrical distribution system. C. P. Steinmetz
Driving wheel I. B. Wiard
Onplicate-whist cabinet. U. R. Harding, Jr. Dust-collector. MultitubularJ. Peter
Dust-pan and broom-support, Combined O. T. Hutchison
bye of the anthraquinone series, Shinirized vat
Dyes of the anthracene series, Making acid. M. Hjinsky
Dyeing apparatus. F. H. Daniels
bynamos from variable and non-variable sources of power, DrivingC. D. Haskins
Egg-tester R. A. Davls Ejecting-container J. E. Broad
Electric apparatus, Static protector for va- por
Electric cables and like purposes, Flexible protector for E. L. Pease
Electric-circuit switch G. Wright Electric heater A. Carpenter
cation device forF. B. Corey Electric-light telltaleJ. F. Key
Electric light socketT. E. Hamby Electric machine, DynamoF. A. Johnson
Electric machine, DynamoE. A. Edwards Electric machine, Three-wire dynamo
Electric machines, Brush for dynamo W. C. Fish
Electric machines, Magnetic shield for
Electric snap-switch
Electrical distribution system
Electric switch, Oscillating, G. E. Stevens Electrical conductor, H. Geisenhoner et al. Electrical distribution system
Elevator Safety applianceS. Bisceglia et al.
M. Schoonfold
for M. Schoenfeld Embro'dery-machine J. A. Groebli Enameling-table C. W. Ebeling
Engine. G. W. Baker Engine. J. A. Menard
Embroidery-machine. J. A. Groebli Enameling-table. C. W. Ebeling Engine. G. W. Baker Engine. J. A. Menard Engine. C. H. Talley Engine-driving means, Rotary-E. D. Lewis Engine-starting device. C. M. Burton et al.
Envelop Non sifting A P Spitko
Evaporating vessel. W. G. Bate Exchange system, Automatie. W. H. Matthies

Extension-table, PedestalS. Kjallgren EyeglassesS. J. Clulee Eyeglasses, Lens-clip for rimlessS. Stott Fabric-roll-edge protector (2 pats.)
Fabrics to rollers, Means for attaching
Feed-water heater and separator
Extension-table, Pedestal. S. Kjallgren Eyeglasses S. J. Clulee Eyeglasses S. J. Clulee Eyeglasses. S. Stott Fabric-roll-edge protector (2 pats.)
Fibrous absorbent resilient material and making itF. D. Lovell Fibrous materials preparatory to spinning, Apparatus for condensingB. Bohle Filaments, Manufacture of lamp-
File, Account
Fire-kindlerG. Poelloth Fire-protection device. R. B. Hewitt et al. FirearmF. I. Johnson Fishing-reels, Click mechanism for W. Kramer
making it. F. D. Lovell Fibrous materials preparatory to spinning, Apparatns for condensing. B. Bohle Filaments, Manufacture of lamp
Funigating apparatus D. N. Calkins Furnace D. J. Hndson Furnaces, Heating air for metallurgical. W. G. Perkins et al.
Fuse-holder R. C. Millard Gage L. B. Minges Game apparatus A. R. Coleman Garment, Demonstration L. S. Carroll Garment-fastener W. L. Whiting Garment-hanger H. Mixa
Gas-engine. W. E. Parker Gas-mixer C. V. Pollock Gases from internal-combustion engines. Deodorizing exhaust L. Bregha Gate fastener, Wire D. E. Ryckman Cook shifting and broke applying mechan-
ism. B. T. Epps Gearing. W. H. Ray Gearing. Reversing. S. M. Wood Glass-tube cutter. G. H. Wilkins Glassware, Apparatus for forming hollow. H. A. Richards et al.
Glassware, Apparatus for forming shapes of
TALE STOPE OF

Governor	
Hose-conpling J. Greenlund Hose-holder J. A. Darst et al. Hot-air register L. Gschwinel Hot-water bottle D. P. Lamb Hib-attaching device E. S. Woodbury et al. Humidifying and air-moistening apparatus. S. W. Cramer et al. Ice-cream-freezer holder E. Praeger Illuminating device W. H. Spencer Illusory dramatic effects, Device for pro- ducing N. Burgess Incandescent lighting-bodies, Making O. Wiederhold Inductive disturbances, Neutralizing D. D. B. Taylor Insect-exterminating machine L. C. Hill Insulator T. D. Childress Internal-combustion engine C. B. Baldwin Internal-combustion engine E. Holland Internal-combustion pumping-engine N. Stafford Ironing-machine J. J. Green Ironing-machine J. J. Green Ironing-table Adjustable A. Logsdon Kiln F. D. Willey Knitting-machine pattern mechanism W. W. Burson	Governor N. A. Christensen Grain-separator G. Spets Grain-tank W. Johnston Grass-catcher A. E. Meyer Grate, Chain- R. Klepke Grate, Chain- R. Klepke Grease-box, Detachable V. Stevenson Grit for poultry J. E. Smith Gnn, Semi-antoniatic I. L. Driggs Hammer and collar, Combined C. Sieker Hammer, Electric (2 pats.) H. F. Whalton Hammer, Tilt- H. Averdung Handle W. G. Bloor Harness-fastener T. J. Scart Hat-punching machine G. W. Hindling r Hay-press G. W. Phelps Hay-rake W. A. Raudabaugh Hay-rake W. A. Raudabaugh Hay-rake M. Jones et al. Hay-rake M. Jones et al. Heating system, Hot-water C. C. Peck High-tension discharge apparatns E. J. Rose Hinge, Floor- O. Katzenberger Hinge, Self-closing G. Hubart
Ironing-board and step-ladder, Combined N. Stafford Ironing-machine	Hose-holder. J. A. Darst et al. Hotagraphical J. Cachwins
Ironing-board and step-ladder, Combined N. Stafford Ironing-machine	S. W. Cramer et al. Ice-cream-freezer holder. E. Praeger Illuminating device. W. H. Spencer Illusory dramatic effects, Device for producing. N. Burgess Incandescent lighting-bodies, Making. O. Wiederhold Inductive disturbances, Neutralizing
	Ironing-board and step-ladder, Combined N. Stafford Ironing-machine

IN EACH TOWN and district to ride and exhibit a sample Latest Model "Ranger" bicycle furnished by us. Onr agents every where are making money fast. Write for full particulars and special offer at once.

NO MONEY REQUIRED until you receive and approve of your bicycle. We ship to anyone anywhere in the U.S. without a cent deposit in advance, prepay freight, and allow TEN DAYS' FREE TRIAL during which time you may ride the bicycle and put it to any test you wish. If you are then not perfectly satisfied or do not wish to keep the bicycle ship it back to us at onr expense and you will not be out one cent.

FACTORY PRICES We furnish the highest grade bicycles it is possible to make at one small profit above actual factory cost. You save \$10 to \$25 middlemen's profits by buying direct of us and have the manufacturer's guarantee behind your bicycle. Do Not Buy a bicycle or a pair of tires from anyone at any price until you receive our catalogues and learn our unheard of factory prices and remarkable special offers to rider agents.

YOU WILL BE ASTONISHED when you receive our beautiful catalogue and study our superb models at the wonder less money than any other factory. We are satisfied with \$1.00 profitabove factory cost. Orders filled the day received.

BICYCLE DEALERS, you can sell our hicycles under your own name plate at double our prices. Orders filled the day received.

SECOND HAND BICYCLES. We do not regularly handle second hand blcycles, but usually have

Notice the thick rubber tread "A" and puncture strips "B" and "D" also rim strip "H" to prevent rim cutting. This

BICYCLE DEALERS, you can sell our hicycles under your own name plate at double our prices. Orders filled the day received.

SECOND HAND BICYCLES. We do not regularly handle second hand bloycles, but usually have a number on hand taken in trade by our Chicago retail stores. These we clear out promptly at prices ranging from \$3 to \$3 or \$10. Descriptive hargain lists mailed free.

GOASTER-BRAKES, single wheels, imported roller chains and pedals, parts, repairs and equipment of all kinds at half the regular retail prices.

Self-healing Tires A SAMPLE PAIR TO INTRODUCE, ONLY

The regular retail price of these tires is

NO MORETROUBLEFROM PUNCTURES NAILS, Tacks, or Glass will not let the air out.
A hundred thousand pairs sold last year.

DESCRIPTION: Made in all sizes. It is lively and easy riding, very durable and lined inside with

a special quality of rubber, which never becomes porous and which closes up small punetures without allowing the air to escape. We have hundreds of letters from satisfied customers stating that their tires have only been pumped up once or twice in a whole season. They weigh no more than a roughney tire, the pureture resisting qualities being the season.

stating that their tires have only been pumped up once or twice in a whole season. They weigh no more than an ordinary tire, the puncture resisting qualities being given by several layers of thin, specially prepared fabric on the tread. The regular price of these tires is \$10.00 per pair, but for advertising purposes we are making a special factory price to the rider of only \$4.80 per pair. All orders shipped same day letter is received. We ship C. O. D. on approval. You do not pay a cent until you have examined and found them strictly as represented.

We will allow a cash discount of 5 per cent (thereby making the price \$4.55 per pair) if you send Full Cash with ORDER and enclose this advertisement. You run no risk in sending us an order as the tires may be returned at OUR expense if for any reason they are not satisfactory on examination. We are perfectly reliable and money sent to us is assafe as in a hank. If you order a pair of these tires, you will find that they will ride easier, run faster, wear hetter, last longer and look finer than any tire you have ever used or seen at any price. We know that you will be so well pleased that when you want a hicycle you will give us your order. We want you to send us a trial order at once, hence this remarkable tire offer.

IF YOU NEED TIRES don't huy any kind at any price untily you send for a pair of Hedgethorm price quoted ahove; or write for our big Tire and Sundry Catalogue which describes and quotes all makes and kinds of tires at about half the usual prices.

DO NOT WAIT but write us a postal today. DO NOT THINK OF SUYING a hicycle or a pair of iten you know the new and wonderful offers we are making. It only costs a postal to learn everything. Write it NOW.

An Irresistible Bargain

\$1.75 Value for Only \$1.15

\$1.15

One Year's Subscription for McCall's Magazine, Any 15-Cent McCall Pattern you may select, One Year's Subscription for the Inventive Age

McCall's Magazine

Is a large, artistic, handsomely illustrated hundred-page monthly magazine. It contains sixty new Fashion Designs in each issue. Every woman needs it for its up-to-date fashions, entertaining stories and complete information on all home and personal topics. Over one million subscribers. Acknowledged the best Home and Fashion Magazine. Regular price, 5 cents a copy. Worth double.



McCall Patterns

So simple you cannot misunderstand them. Absolutely accurate. In style, irreproachable. You may select, free, any McCall Pattern you desire from the first number of the magazine which reaches you. Regular price, 15 cents.

The Inventive Age.

A journal of manufacturing industry and scientific progress. The indispensable paper for patentees. Contains matter and information not found elsewhere. Regular price, \$1.00 per year.

DON'T MISS THIS EXTRAORDINARY OFFER.

Address: THE INVENTIVE AGE Publishing Co., Washington, D. C.

The DIAMOND

SELF-FILLING AND SELF-CLEANING

Fountain Pen.

IT IS AWAY AHEAD
OF ANY OTHER PEN
MANUFACTURED BECAUSE OF ITS SELFFILLING AND SELFCLEANING FEATURES





Price \$2.00.
Including one year's subscription to "The Inventive Age."

No Lost Time.

No Soiled Fingers.

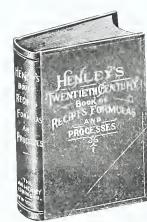
Address---

INVENTIVE AGE PUB'L. COMPANY, WASHINGTON, D. C.

HENLEY'S TWENTIETH CENTURY BOOK OF

Recipes, Formulas & Processes







Edited by GARDNER D. HISCOX, M. E.

Price. \$3.00 Cloth Binding

\$4.00 Half Morocco Binding

800 large Octavo (6 x $9\frac{1}{2}$) Pages.

Contains over 10,000 Selected Scientific, Chemical, fechnological, and Practical Recipes and Processes,

Including Hundreds of so-called Trade Secrets for every business.

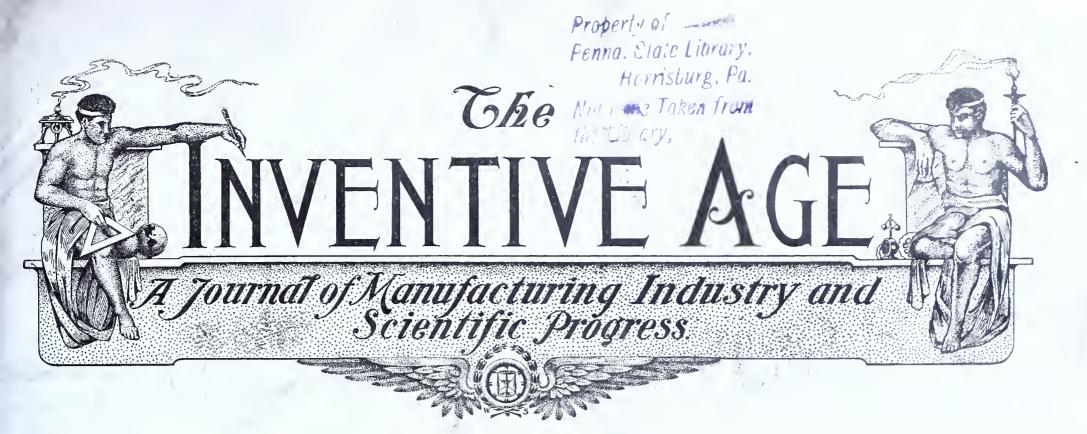
This is THE BOOK everyone should have at his command who seeks PRACTICAL, ACCURATE KNOWLEDGE and GUIDANCE in his every day work, as no book has ever been published which so fully meets the multifarious requirements of the factory, the workshop, the laboratory, and the household. In preparing the work for so exacting and numerous a class of readers the Editor has exerted every effort to present only information which is practical, accurate and modern.

Address

INVENTIVE AGE PUB'L. COMPANY WASHINGTON, D. C.

SEND FOR OUR FREE CATALOGUE OF BOOKS FOR INVENTORS AND MECHANICS.

Address: THE INVENTIVE AGE PUBL'G CO., 918 F St., Washington, D. C.



Vol. XXIII. No. 9. }

Washington, D. C.—September 1, 1911.

SINGLE COPIES 10 CENTA.
ONE DOLLAR A YEAR.

WIRELESS SUBMARINE.

By Frank C. Perkins.

THE accompanying illustration shows the antennæ and wireless telegraph and telephone mast as applied to a submarine boat of English construction. Wireless experiments with sub-marines made in the English channel have been most successful, and it is claimed that the adaptation of radiography to submarine boats is assured.

By means of the equipment shown in the photograph, wireless telegraph communication may be maintained even when the boat is submerged, the parent ship being kept informed of the movements of the submarines at all times, a task which has hitherto been impossible. In the English channel test, the cruiser "Bonaventure" established wireless communication with the submerged submarines, which were running astern a considerable distance. It will be noted that the wireless telegraph conductors are installed near the conning tower, the system leading down the hatch way.

The main use to which these boats would be put in war would be in ascertaining a ship's vulnerable parts. Heretofore, one of the most decided drawbacks to the utilization of the submarine has been the lack of means of communication between them and the parent warship directing their movements. It would seem that this development solves the problem.

This new device will also aid in diminishing the dangers of the submarine. Thanks to the improvements on the periscope, the submarine now has an eye, and with this latest device, a way of talking with her companions on the surface of the water as well. They are also fitting those little fish-like boats



with a door through which the crew can escape if necessary. Several distressing accidents have happened to French submarines, the boats being unable to rise to the surface from one cause or another, and all on-board dying of suffocation. Nor have we in this country forgotten the struggle to raise one of our own vessels under like conditions—a struggle fortunately attended with happier results than in the case of the foreign boats. A sort of submarine jacket is now applied, consisting of a copper hood with a thick glass door attached to a canvas coil, much like a life preserver. Inside the coil is a copper flask filled with oxalite, from which extends a tube which the wearer of the jacket adjusts to his mouth. With the jacket drawn tight at the waist, the head and body of the wearer are enclosed in an air tight covering. The moisture of the breath acting on the oxalite releases oxygen and refreshes the air, while the residue of the oxalite absorbs the carbonic acid gas in the breath.

A still more comprehensive rescue device was invented during the last winter. It is a submarine which, in case of accident, will drop its keel and rise safely to the surface. The boat is divided along a horizontal plane into two parts, of which the lower, the water ballast compartment, can be detached from the upper, which is the submarine proper. In case of an accident, not entirely wrecking or filling the craft with water, it is hoped that by dropping the lower section, the upper, containing the crew and all the machinery, will raise.

Metal straps pass around the lower section and hold it fast to the upper by means of threaded rods, operated automatically or by hand from the inside. The

tube rising from the center of the lower section has a hermetic contact with a like tube in the upper section, but is not otherwise joined. When the submarine is to be submerged, the ballast compartment is gradually filled with water by means of this tube, the displacing air escaping. When the submarine is to rise, compressed air drives the water out of the ballast compartment. Should the lower section have to be dropped, a float rises to the surface as a means of locating its position.

Another peril to the submarine is escaping gas, which may lead to an explosion. By the regulations in force in the navy, the engine must be stopped as soon as an escape is noticed, a bad accident having been caused a few years ago by neglect of this precaution. In the early days of submarines mice were kept on board, as they were affected by the escape of the gas long before the crew noticed it, and would run about squeaking violently, and making so many signs of distress that their actions were a clear danger signal. At present a more scientific method of detecting the escape of noxious fumes is in use. An apparatus registers the escape of gas, and comes into action before enough can enter the air to be dangerous. By an ingenious contrivance a red light is turned on and a bell rung when there is a leakage.

Sometimes sea water will penetrate into the accumulators, a very serious danger, as chlorine is thereby evolved which may suffocate the crew. One of our boats had a narrow escape in this way, but fortunately an attending ship was near and opened the hatch as soon as it was seen that something was wrong. Another invention is a long, flexible tube attached to the outside. At one end is a float, while the other communicates with the interior. In the event of an accident this tube is liberated, and is at once borne to the surface by the float, to which is attached a flare, to give notice to other vessels. Until the submarine is raised, the crew can breathe through this tube.

A Marine Fiber.

The discovery of a new fiber of marine origin, which is likly to prove of commercial importance, is reported by one of our consuls in Australia. The fiber is the result of the shedding of the sheath of a sort of sea grass, huge deposits of which have been pickling. collected in the waters near the coast of the southern continent. It is being gathered, with the aid of special dredges equipped with rakes, together with agitators and wringers similar to those used in washing wool. The ways in which this new fiber can be utilized are many and varied. It will spin and weave in union with wool, and will take dye equally as well. It is practically non-inflammable, and it does not shrink. While too coarse for employment in textiles, it is well adapted for the making of carpets, also for bagging, ship calking, etc.

HIGH PRESSURE SAND BLAST.

HE method of operation and the details of construction of a novel high pressure sand blast machine will be noted in the accompanying illustrations. The salient point of difference between this and other machines is that the pressure, whatever it may be, is brought to bear at the point of ejection, free from any friction in propelling the sand; and the latter is further accelerated through a high velocity jet, which gives it added efficiency and a tremendous hitting

It is claimed to be the only device in which the volume of air consumed is under control. In other machines, the moment they commence to operate the wearing effect of the sand enlarges the orifice of the nozzle, and more air escapes, with a consequent reduction of pressure and efficiency.

several others, all of which have been utilized for cleaning stone buildings and soft iron castings and less successfully for removing paint and light rust from metal structures.

In order that sand blast machines may thoroughly accomplish the purpose for which they are designed, it is necessary that they should operate under a much higher pressure than heretofore. No other machine, it is claimed by the inventor, has ever been able to produce at the nozzle a uniform pressure of more than 50 pounds per square inch. It is stated that this device will operate at and steadily maintain any desired pressure, although the best results are produced by working at about 100 pounds. This is rendered practicable by the radical difference in construction between this and all other sand blast machines, in

FIG. 3.—DETAILED VIEW.

It is maintained that this sand hose takes a mixture of sand and air at a low velocity and feeds it into the high velocity jet; the combined jets of air and sand then pass out through the end of the nozzle, a one-quarter inch orifice, at a high velocity. The parts of the nozzle exposed to wear are protected by removable tips. One tip is used in the nozzle where the sand passes from the sand hose. Another tip is used at the end of the nozzle. These tips are inexpensive and easily replaced when worn out.

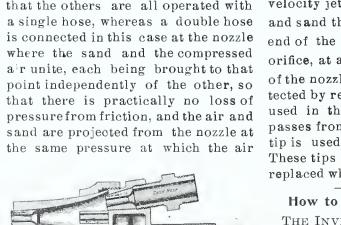


Fig. 2.—The nozzle.

entered the machine. At 100 pound pressure per square inch, it consumes not more than 60 feet of free air per minute, which is less than 60 per cent of the quantity used by any other machine. It is operated with one and one-third tons of sand per day, while low pressure machines consume from four to eight tons per day, depending on the size of the nozzle. For cleaning iron and steel and steel castings. the machine could be operated at from 90 to 100 pounds pressure.

The compressed air is carried

through a one-inch seven-ply hose

from the machine to the nozzle, and

is there expanded in a jet of high

velocity through a 3-16 inch orifice.

The air hose is not subject to any wear, and will stand an air pressure of 150 pounds. The same is carried from the sand tank through a threequarter-inch seven-ply, pure rubber, sand hose to the nozzle.

How to Get Copies of Patents.

THE INVENTIVE AGE prints each month a list of the patents granted by the Patent Office. This list includes the name of the inventor, the title of the invention and the date of the patent. Anyone can procure through THE INVENTIVE AGE a copy of any patent included in the list, by giving the data and enclosing ten cents in stamps for each copy. There is no better way of keeping yourself informed about the progress of the arts than by scanning the list each month and ordering copies of patents.



FIG. 1.—SAND BLAST IN OPERATION.

This sand blast machine has superseded the pneumatic chisel for cleaning sand crust from steel castings in the large steel foundries in Pittsburg. It does, it is said, the work of four chisels and does it better, since every vestige of sand crust is removed. It has also done away with the necessity for pickling carbon steel ingots, as it removes the hard mill scale and exposes any flaws. This is done with great rapidity and at a great saving as compared with the old method of

It is stated that two of these blasts will clean over 200 ingots per day of ten hours. For cleaning the bottoms and the interior of steel ships, it is without an equal in point of efficiency and speed, and is largely used for cleaning oil tank ships. They are also using it on oil and acid tanks, it averaging 54 yards per day on the latter work.

Sand blast machines have been in more or less successful use for many years, the first device of the kind having been utilized about four decades ago. This was followed by

WHAT IS AN INVENTION?

"Of late there has come into greater and we believe more deserved prominence the doctrine that invention depends on the practical effort of the inventor to show and demonstrate the success of his process or device. Broadly speaking, the language of Paley, a common-sense English theologian of the eighteenth century, 'He alone discovers who proves,' exactly fits the case. An analysis of the essentials of an invention in the light of Paley's maxim is of use to the metallurgical or chemical engineer in whose industry the old order ever yieldeth, giving place to the new. The conception of an invention can come from either a flash of intuitive thought or from a long course of hard reasoning, or it can come from an artistic blending of the two, a combination of mental action. Before he can act efficiently and successfully the inventor must see clearly and think correctly. By the building up of a structure of countless mental bricks, * * * the inventor reduces his invention to practice and his original and novel idea has become a useful reality. In short, the value of an invention is measured by the standard of William James' pragmatism-'Utility is the test of truth.' The invention of an inventor is comparable to the play of a writer. The invention of a great inventor is comparable to a play of Shakespeare's."

"Shakespeare made use of the form of tragedy brought to perfection by Marlowe from the old miracle plays of the monks. Finally, he made use of many old phrases, rhymes, and conceits, of many old tricks of stagecraft. Looked at in a narrow sense there is hardly anything new in it, and on this perverted view the partial truth 'there is nothing new under the sun,' has indeed a verisimiltude. But my literary critic, in fact, any man of literary taste and ordinary judgement, would dismiss at once the charge of plagiarism from Shakespeare. Shakespeare did not steal 'Hamlet.'

"Shakespeare is comparable to the great inventor, for he was a good actor as the great inventor is a fair mechanic; he was a good playright with a keen sense of the public wants, as the great inventor has a keen sense of the needs of the industry; he was fairly successful financially just as the higher type of an inventor like Bessemer, Siemens, Bell and Edison have had their share in the financial rewards. In short, they both unite the real with the ideal in a sensible sort of manner. Shakespeare used inferior and old materials and pro-

duced a superior article. Bessemer did precisely the same. Just as Shakespeare was original so is the inventor original who proves his invention by intelligently directed hard work. For as old Dean Paley said, 'He alone discovers who proves.' In the welter and toil of developing an invention the 'merely obvious' is usually discovered with difficulty. In fact, what hindsight calls the obvious is usually the antonym of obvious. For, if the obvious was so eternally simple and infernally apparent, why did not some one else discover and prove its existence and value? This common-sense doctrine is seen in every one of the patent decisions of the Supreme Court of the United States. To be a bit disrespectful, law is, after all, only long-winded common-sense." - Metallurgical and Chemical Engineering (New York.)

Water Aspirator.

The removal of dust by the use of suction apparatus is recognized as the modern and sanitary method. Powerful forms of apparatus are installed for cleaning railway cars, hotels, stores, etc., and in private residences there are occasionally found devices actuated by hand power or by means of a small motor. A German scientist advocates the use in the household, for purposes of sweeping and dusting, of suction effected by the simple inexpensive water pump so generally employed in laboratories. Such a pump consists of a vertical pipe through which water flows under pressure, as from a city water main. If an opening is made in the side of the tube, air is sucked in and issues, mixed with the water, at the bottom of the tube. The principle is about the same as that of the injectors used in feeding boilers. In these, a current of steam and a supply of cold water replace the current of water and supply of air in the simple filter pump.

Such an attachment can be connected with a water tap in a kitchen or bathroom. Flexible hose is joined to the suction tube on the side of the fixture. When water is turned on, a strong current of air is sucked through the hose, and the latter can be directly applied for the purpose of cleaning carpets, etc. All dust is absorbed into the stream of running water and is thereby effectively removed from the house. Once installed in a dwelling, an apparatus for producing powerful suction can be utilized in a variety of ways, for the water pump exhausts air to a degree of attenuation quite equal to that attained by the costly air pump with cylinder and piston.

To keep themselves posted in the progress of the arts in which they are interested, inventors and manufacturers should subscribe for the INVENTIVE AGE, which publishes a list of all patents issued each month. The low subscription price and the character of the publication entitle it to the support of all the inventors of the country.

BARGE CANAL SIPHON LOCK.

The accompanying illustration shows the construction and indicates the method of operation of the new siphon lock on the barge canal at Oswego, New York. The siphon neck may be noted above the wall, as well as the valve for starting and stopping the flow.

The siphon lock on the state barge canal at Oswego has a width of 45 feet and an available length of 300 feet, the lift being from 6 to 12 feet. This siphon lock is filled and emptied by causing the water to run through the inverted "U" passage by exhausting the air, thus doing away with the need of culvert valves.

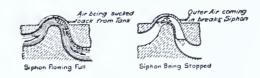
power but automatically renews it during each operation.

It may be mentioned that the general construction and design of the culverts of the siphon locks are similar to ordinary locks, except that at the upper and lower end the culverts are curved up so as to form siphon necks, rising a little above the highest water level and shutting off all communication with the outer atmosphere except through the controlling and operating pipe. Advantage is taken of siphon action, all of the water flowing into or out of the chamber passing up over the crests of the siphon and lifting itself over the



CANAL SIPHON.

This slphon lock was completed and placed in operation in June 1910, and has been in daily use since that date. The air is exhausted by being let into a tank in which a vacuum is created by the head of water. While this is the only lock of the siphon type in America, a number have been utilized in Germany. It is claimed that they have an advantage over the usual type of barge canal locks, in that no complicated machines or motors are required, and no large culvert valves have to be operated under water. They are simple and cheap to construct, and the cost of operation and maintenance is low.



The siphon lock is filled and emptied through culverts embedded in the walls and controlled by large steel valves, the flow through these pipes being entirely by gravity. There is thus offered the advantage of all the movements being made by the direct action of the head of water on the air pipes, controlled by hand valves. It is of interest to note that the head of water not only supplies the motive

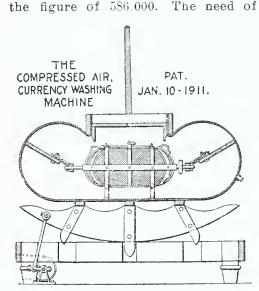
top of the lockwall before it begins to flow down into the lower level of the culverts. In this manner the lock chamber is filled and emptied by water operating under the action of gravity, reducing the cost of operation and maintenance to a minimum. The tank space at the upper end of the wall pressure is 21 feet long, $7\frac{1}{2}$ feet wide and nearly 8 feet high, with a center partition built in the wall and communicating by means of pipes with the upper and lower level and with each siphon in the same wall.

Bridge Building in the Night.

Building a bridge in the night, and in the intense cold of the Arctic, is the most recent feat of engineering. It was accomplished in Alaska, when a cantilever bridge was constructed across the Kuskulana River. Electric lights turned the long night into day, and the forcing of steam along with the compressed air so moderated the temperature as to enable the pneumatic riveters to continue their work steadily. This bridge forms the last link in the Copper River and Northwestern Railroad, from Cordova to the Bonanza Copper Mines, 200 miles away. It is 800 feet long, and 225 feet above water. It is all of steel, with concrete piers.

WASHING CURRENCY.

With the general advance in sanitation has come recognition of the need of cleanliness in all directions. We no longer think it a necessary part of life to eat a peck of dirt, and unexplained deaths are ascribed less to the workings of a mysterious Providence and more to the probable ack of prophylatic measures. It has been found that one of the dirtiest things we touch in every day life is money, and more particularly the paper money that passes from hand to hand and is an ideal germ carrier. Lucre is indeed filthy. An examination of paper currency made by Prof. Warren H. Hilditch of the Sheffield Laboratories of Bacteriology of Yale showed an average of 142,000 bacteria to the bill. Twenty-one bills were examined, and while some were relatively clean, carrying only a trifle of fourteen thousand, others swarmed to



correcting this condition occurred to F. B. Churchill, of Shelbyville, Ind., and he has invented a machine for washing the money. Mr. Churchill, who was born at Sycamore, Ill., went to California when a boy and later embarked in the washing machine business, in which he has been occupied for twenty-two years. The principle on which his machine operates is to clean clothing, etc., by the power from compressed air, and it was some twenty years ago that he made the discovery that currency could be washed as well as other articles. He used to throw old soiled bills into the washing machine to show people that there could be no possible injury or wear to the most delicate fabric. He experimented first with cold water, afterwards with warm, and finally with hot, until he was able to remove the grime and transform the dirty bills into fresh, crisp currency, bearing every mark of having just been issued by the government.

Realizing the necessity of a wide application of his process, and being of a progressive spirit, Mr. Churchill wrote to the Treasury Department in the spring of 1910, and informed the officials that he had solved the problem of cleaning soiled currency. The Department asked him to give a

factory that one of the machines was purchased for government use, and installed in the Treasury Department. It was not until after this test was made that Mr. Churchill realized the full magnitude of his discovery, and decided to apply for a patent on it. The latter has recently been granted, and the accompaying illustrations show the device. It will be seen that the washer consists of an oscillating vessel, with air chambers and brackets to support a foraminous basket, which is securely fastened inside, although it is adjustable. The dirty bills are placed in the basket and securely locked therein by three separate locks, the reason for which is obvious. The basket is then placed within the body of the washer, which contains a solution of hot soap suds, and the machine is put in operation. The compressed air forces the suds and hot water through the meshes of the money basket with such force that the bills are cleaned thoroughly. The basket is then removed and placed in another washer, which contains a solution of sizing or starch, and here the money is subjected to a thorough bath of stiffening, which gives it the crisp appearance of new bills. After a few minutes of immersion of this bath it is ready to be dried. The basket is taken from the sizing machine and placed in the drier, which is so canstructed that the basket containing the wet bills is revolved rapidly by an electric motor that drives it, and the water is drawn from the bills by centrifugal action. During the operation of the drier, a strong high-pressure current of air is turned into the rapidly revolving basket from the air storage tank, and while the bills are being dried by the rapid motion imparted to the money basket, the force of air is continually straightening out the folds from the bills. Then the basket is removed from the drier, and unlocked and the bills are passed through a heavy set of pressure rollers, between layers of heavy cardboard, after which they emerge, clean, crisp and resembling new money. The process of cleansing the dirty

demonstration of the operation of

his machine. This was later done

before a committee of Treasury

officials, and the result was so satis-

The process of cleansing the dirty bills seemingly puts new life into the paper, and the bills are pliable, hava soft velvety feeling.

The renovation of currency will be a step in keeping with the progressive age, and one that all banks and handlers of large amounts of money will appreciate. The public is awake to the dangers that lurk in the folds of the germ-laden bills, and will be prompt to clamor for a renovation of all dirty money, thus diminishing the possibility of transmitting diseases. The dirtier the bill the more it travels as it is always the dirtiest bill we pass along. The time is not far distant when every bank can be supplied with a fully equipped currency washer and drier. Thus the expense of reissuing new money will be reduced, with great saving to the government, as well as to the individual banker, who has to send in his old bills to be redeemed with new ones. The expense of sending the bills to the U. S. Treasury and Sub-Treasuries amounts to a heavy tax on those banks that are located at distant points.



The United States pays the 20 cents express charges on every \$1,000 sent by the banks to Washington, and the banks pays the 20 cents charges for its return. This rate is special to the government and applies to points in the East; but when a Western bank buys currency in the East, it must pay 80 cents on the \$1,000 for exchange and expressage. From places in the Southwest the rates for shipping money are, bankers say, practically prohibitive. If a banker in San Antonio has a lot of unsanitary currency that he wants new money for, he will have to pay \$1 on the thousand to get into St. Louis for exchange. The clean money has already cost the St. Louis hanker \$1.20 for the round trip from the East and this added to the \$1.00 on coming from, and \$1.00 on going to San Antonio, makes the cost of new bills pretty heavy in Texas.

If an Omaha banker wants to give his customers new clean currency, he must get it from the East, at an expense of \$2.20 a thousand for express charges and exchange. An Oklahoma banker must pay \$2.50, and one in Little Rock, Arkansas, \$2.20, while the Houston (Tex.) banker is put to the expense of \$3.20 to accommodate his clients with clean currency. In the far Western States, the rates are, of course higher. For this reason the people in the West are compelled to handle more filthy, disease-breeding money than those in the East. A week or two is also lost before the money is returned. The saving of time and money will lead the large banks to install laundries of their

Heretofore it has been the policy of the government to destroy its dirty and mutilated currency, but the new discovery of Mr. Churchill will revolutionize the system. The Treasury figures for last year show that \$1,183,000,000 in soiled bills were redeemed by new ones. There were some 200,000,000 individual bills in this amount. Eighty per cent of them, or 160,000,000, might have been washed.

It costs 1.3 cents in each to make these bills. They may be laundered for .1 of a cent. The saving will be 1.2 on each bill, or \$2,080,000 a year. With due allowance for the discrepancy between theory and practice, it is estimated that a million dollars a year may be saved through the washing process.

It has been determined that the life of a one dollar bill is one to two years, that of a \$2 bill one to four years, and that of bills of larger denominations about three years. If by washing it the life of a bill can be lengthened, the Bureau of Engraving and Printing will have to manufacture but half as much money, and one of the expensive bureaus of the government can be operated much more cheaply.

THE INVENTIVE AGE contains sound advice to inventors and patentees. For lack of such advice many have lost money. Subscription price, one dollar a year.

PATENTS

Send Your Business Direct to Washington Saves Time and Insures Better Service.

Trade Marks,
Copyrights
and
Designs.

My office is close to the U. S. Patent Office. Personal attention given—OVER THIRTY YEARS PRACTICE. Book "How to Obtain Patents," etc., sent free Patents procured through E. G. Siggers receive special notice. without charge, in the—

INVENTIVE AGE

Illustrated Monthly-Twenty-third Year, Terms, \$1.00 a Year,

E. G. SIGGERS, 918 F STREET, N. W., WASHINGTON, D. C.

LATEST COURT DECISIONS IN PAT-ENT, COPYRIGHT AND TRADE-MARK CAUSES.

UNION TYPEWRITER CO. v. L. C. SMITH & BROS. TYPEWRITER CO. et al.

(Circuit Court of Appeals, Third Circuit. Sep. 21, 1910. ISI F. R. p. 966.)

1. Patents—Validity-Double Patenting. Where the claims of a patent are narrower than the real invention, the error or mistake cannot be corrected by inserting the broader claims in a subsequent patent for improvements on the first, but only by a reissue.

2. Patents—Anticipation — Double Patenting—Typewriter.

The Daugherty patent, No. 481,477, for a typewriter, is, as stated in the application, for improvements in the construction of parts of the machines described in patents Nos. 467,258 and 470,990 to the same patentee; but claims 37 and 38, introduced by amendment, are not for such improvements, but are for combinations disclosed in said patent No. 470,990, and void for anticipation thereby.

PATTERSON v. UNITED STATES.
(Circuit Court of Appeals, Ninth Circuit.

Oct. 3, 1910. 181 F. R. p. 970.)

PERJURY—PATENT LAWS—COMMISSIONERS'
RULES—OFFENSES—PERJURY.

Rev. St. § 4886 (U. S. Comp. St. 1901, p. 3382), requires an applicant for a patent to make oath that he believes himself to be the original and first inventor and discoverer of the art, machine, manufacture, composition, or improvement for which he solicits a patent, that he does not know and does not believe that the same was ever before known or used, and shall state of what country he is a citizen. The Commissioner of Patents, with the approval of the Secretary of the Interior, under authority to make rules, promulgated rule 46, providing that the applicant shall make oath or affirmation that he does verily believe himself to be the original and first inventor and discoverer of the art, and also to state whether he is the "sole" or joint inventor of the invention claimed in his application. Section 5392 (page 3653) declares that every person who, in any case in which a law of the United States authorizes an oath to be administered, willfully and contrary to his oath states any material matter which he does not believe to be true, is guilty of perjury. Held that, since the Interior Department could not by rule or regulation add any word or words to the statutory oath, an applicant for a patent was not guilty of perjury, though he falsely stated that he was the "sole" inventor of the article for which a patent was applied.

AMERICAN DISAPPEARING BED CO. v. ARNAELSTEEN.

(Circuit Court of Appeals, Ninth Circuit. Oct. 3, 1910. 182 F. R. p. 324.)

1. Patents—Action for Infringement— Issues—Demurrer.

The question whether or not the subjectmatter of a patent is within one of the classes of things which are patentable under the statute is purely one of law, and may be determined on demurrer in an action for its intringement.

2. Patents-Subjects of Patents-"Manufacture"—Room in House.

A house, or a room in a house, is not a "manufacture," within the meaning of Rev. St. § 4886 (U. S. Comp. St. 1901, p. 3382), which authorizes the granting of patents for "any new and useful art, machine, manufacture, or composition of matter," and a particular form of construction of a room, or portion of room, in a house, is not patentable.

3. Patents—Validity-Apartment House With Disappearing Bed.

The Holmes patent, No. 838,996, for an apartment house with disappearing bed, is void, because the subject-matter is not within the patent law.

NATIONAL MALLEABLE CASTING CO. v. AMERICAN STEEL FOUNDRIES.

(Circuit Court, D. New Jersey, Sep. 12, 1910, 182 F. R. p. 626.)

1. PATENTS — INVENTION — IMPROVEMENT

That an improvement on a patented device, made by its inventor, may have seemed simple or obvious to him, and may to others after it was made, does not necessarily show that it involved only mechanical skill nor deprive him of the right to a patent therefor; the test of mechanical skill not being measured by the skill of the original inventor, but by that of mechanics who stand in the ordinary relation to the invention.

2. PATENTS—ANTICIPATION-COMBINATIONS.

That there are resemblances here and there between the means employed in a patented device and those of prior patents does not negative invention in the latter combination.

3. PATENTS — INVENTION — PRESUMPTION FROM GRANT.

Simply raising a doubt as to whether a skilled mechanic, conversant with the art involved, would not have seen the means adopted in a patented device, does not rebut the presumption of invention arising from the grant of the patent.

4. PATENTS—COMBINATION—PATENTABILITY OF SEPARATE ELEMENTS.

An inventor of a new and useful combination is not confined to his combination claims unless all of the elements are old; but if any of the elements are new and useful and show invention, they may be claimed and patented either in a separate pateut or by separate and distinct claims in the patent covering the combination, even though such parts are without utility save in combination with the other parts of the device.

5. PATENTS—INFRINGEMENT—RIGHT OF REPAIR.

The right of the purchaser of a patented combination device to repair extends to the replacing of a part which has become defective, unless such part has been separately patented, but not if it has been so patented.

6. PATENTS—INFRINGEMENT—SUPPLYING PARTS OF PATENTED COMBINATION.

One who without authority from the patentee makes locks which are parts of a patented car coupler, although the patent is only for the combinatiou, and sells the same to railroad companies to be kept on hand and used to replace the locks of the patented couplers as they become inoperative by reason of the breaking of the lifting links, such links being afterward repaired or replaced by the companies and the locks again put in use, is not a repairer, but is a contributory infringer of the patent.

AMERICAN STOKER CO. v. UNDER-FEED STOKER CO. OF AMERICA et al.

(Circuit Court, W. D. Pennsylvania, Oct. 27, 1910, 182 F. R. p. 642.)

A patentee of an improvement on a prior combination by adding thereto a single new element is not entitled to claim equivalents to the same extent as the patentee of the original combination.

2. PATENTS-INFRINGEMENT-IDENTITY OF FORM.

A structure may be within the letter a patent and still not be an infringement, where it operates on a different principle and is intended for a different purpose.

BOSS MFG. CO. v. THOMAS.

(Circuit Court of Appeals, Eighth Circuit, Oct. 11, 1910, 182 F. R. p. 711.)

1. Patents—Construction—Proceedings in Patent Office.

When an inventor seeking a patent for a broad claim acquiesces in the rejection of the same by the Patent Office and substitutes therefor a narrower one which is allowed, such claim must be construed with reference to the rejected claim and the prior state of the art, and will not be so interpreted as to cover either what was rejected by the Patent Office or disclosed by prior devices.

2. Patents —Invention—Substitution of Equivalents.

The use in a patented device of a screw to fasten together two parts instead of a rivet

used in prior devices, for the purpose of making them more readily detachable, is but the substitution of a well-known mechanical equivalent and does not amount to invention.

3. PATENTS — EVIDENCE OF INVENTION— UTILITY AND EXTENT OF USE.

The fact that a patented article has gone into extensive or general use is evidence of its utility, and in doubtful cases may be considered as evidence of invention but is not conclusive, and, where there is no invention, the extent of the use is immaterial.

HEATHER GRILLE & DRAPERY CO. v. CHRISTOPHERSON et al.

(Circuit Court of Appeals, Ninth Circuit. Oct 28, 1910 182 F. R. p. 817.)

1. PATENTS—ASSIGNMENT-EFFECT OF ESTOPPEL,

An assignor of a patent is not estopped to deny its infringement by a later invention of his own, nor to invoke the prior art for the purpose of showing that no infringement in fact exists.

2. PATENTS—INFRINGEMENT—ORNAMENTAL GRILLE WORK.

The Christopherson and Gillespie patent, No. 691,598, for a device for forming ornamental structures, such as grilles, etc., cut of leather, felt, or other flexible materials, construed, and held not infringed by the device of the Christopherson patent, No. 766,595, for an improvement in the same art.

VICTOR TALKING MACH. CO. v. DUPLEX PHONOGRAPH CO.

(Circuit Court of Appeals, Sixth Circuit, Oct 15, 1910. 182 F. R. p. 822.)

1. Patents—Infringement—Talking Machines.

In the Conn patent, No. 624,301, for an improvement in graphophones, claims 7 and 8, the only feature of novelty is the employment of a double bell, as distinguished from a single bell, in supporting relation with the sound box, and in view of the prior art the patent must be limited to a construction in which the two horns are blended or united at their discharge ends. As so construed, such patent is not infringed by the device of the Hill patent, No. 773,740, in which two separate horns are used.

2. PATENTS—"BELL."

The term "bell" used in a patent for a graphophone means the amplifying horn used in sound-reproducing machinery.

MORSE CHAIN CO. v. LINK BELT CO. (Circuit Court, S. D. New York. Oct. 31, 1910. 182 F. R. p. 825.)

1. Patents — Reissues — Identity of Invention.

A reissue patent cannot be issued for an invention other than the one actually described in the original patent.

2. Patents—Reissues-Identity of Invention—Chain Driving Gear.

The Morse reissue patent, No. 12,912 (original No. 736,909), for a chain-driving gear for a transmission of power, is void as not being for the same invention as the original patent, which was clearly limited to a two-part pintle.

KESTNER EVAPORATOR CO. v. AMERICAN EVAPORATOR CO.

(Circuit Court, E. D. Pennsylvania, Dec. 1, 1910. 182 F. R. p. 844.)

1. Patents — Construction — Effect of Nonuser.

While the validity of a patent is not affected by its nonuser, such fact may have a bearing on its construction in requiring its limitation to the device plainly shown and distinctly described.

2. PATENTS—INFRINGEMENT—EVAPORATOR.

The Hewitt patent No. 548,986, for an evaporator, claim 1, in view of the prior art and the proceedings in the Patent Office, is limited to a device having one or more return tubes which accelerate the circulation of the liquid. As so construed, held not infringed.

KELLOGG SWITCHBOARD & SUPPLY CO. v. DEAN ELECTRIC CO. et a..

(Circuit Court of Appeals, Syxth Circuit, Feb. 8, 1910. Rehearing Denical state 1910. 182 F. R. p. 991.

1. Patents — Construction — Unclaimed Advantages of Invention.

That a particular advantage of a patented device was not claimed or mentioned in the specification will not exclude it from the scope of the patent if it was necessarily achieved by the invention.

2. PATENTS-INVENTION.

That a patentee took but a short step over prior devices in the art,, which seems simple, does not necessarily negative invention.

 PATENTS — VALIDITY AND INFRINGEMENT— CURRENT CONTROLLING DEVICE FOR TELE-PHONE CIRCUITS.

The Dean putent, No. 722,212, for an improvement in telephone circuits in a central battery system design d to reparate the voice current from the energizing current at the subscriber's substation so the title voice current only shall pass through the telephone receiver, was not anticipated, and discloses patentable invention, but, in view of the prior art and the meager proof as to the utility of the device, is entitled only to a narrow construction and a limited range of equivalents. So construed, it is not infringed by the device of the Mansion patent, No. 818,897, which, while accomplishing the same result, is different in structure and principle of operation.

WILLIAM WRIGLEY, JR., & CO. v. GROVE CO. et al.

(Circuit Court of Appeals, Second Circuit. Nov. 14, 1910, 183 F. R. p. 99.)

1. TRADE - MARKS AND TRADE - NAMES—
WORDS SUBJECT TO APPROPRIATION—
"SPEARMINT."

The word "Spearmint," as applied to chewing gum, is a term descriptive of the flavor, open to every mannfacturer who uses such flavor, and cannot be appropriated as a trade-mark.

 TRADE-MARKS AND TRADE-NAMES—UN-FAIR COMPETITION-IMITATION OF PACK-AGES.

Defendants, in imitating complainant's cartons and packages containing "Spearmint" gum, held chargeable with willful and intentional unfair competition, which entitled complainant to an injunction.

WATERBURY BUCKLE CO. v. ASTON. (Circuit Court of Appeal, Second Circuit. Nov. 14, 1910. 183 F. R. p. 120)

PATENTS -- ANTICIPATION -- IDENTITY OF INVENTION.

A patent cannot be invalidated by a structure which can only be altered into an anticipation by the use of inventive skill.

ACME TRUCK & TOOL CO. v. MEREDITH.

(Circuit Court of Appeals, Eighth Circuit, Oct. 17, 1910, 183 F. R. p. 124.)

1. Patents—Construction—Scope.

A patentee who has sufficiently described and distinctly claimed his invention is entitled to every use to which his device can be applied, whether he perceived or was aware of all of such uses at the time he secured his patent or not.

2. Patents—Infringement—Patents for Combination.

A device does not infringe a patent for a combination if any essential element of the combination is omitted without substituting therefor its clear mechanical equivalent.

3. Patents — Infringement — Vehicle Spring.

The Mcredith patent, No. 878,081, for a vehicle spring, construed, and held not infringed.

DOWAGIAC MFG. CO. v. MINNESOTA MOLINE PLOW CO. et al. SAME

v. SMITH et al. (Circuit Court of Appeals, Eighth Circuit.

Oct. 24, 1910. 183 F. R. p. 314.)
PATENTS — INFRINGEMENT OF IMPROVE-

MENT PATENT—PROFITS RECOVERABLE.

The Hoyt patent No. 446.230, for a grain

rine Hoyt patent No. 446,230, for a grain drill, is for a combination of old elements with a single novel element added for the purpose of giving an independent spring pressure to each of the shoes of the drill, and, in order to entitle the owner to recover profits from an infringer, it is indispensably necessary that the proofs should enable the court to apportion the profits between the novel and only patentable feature and the remainder of the structure.

MECHANICAL INVENTIONS AND DESIGNS

Patents for which have been procured through the Patent Soliciting Office of E. G. Siggers, Patent Lawyer, Washington, D. C.

Marshall M. Cram, Mankato, Minn. Profile Measuring and Recording Device.—The object of this invention is to provide a simple, efficient and easily operated instrument, adapted to be used by surveyors and others for making cross sections, profiles and maps of small areas of land, the device being capable of automatically tracing on a sheet of paper the profile of the surface over which a portion of the device is carried. The device is mounted on a tripod, forming a support for a vertically movable rod and by means of which said rod is adapted to be carried over the surface of the ground to be measured. A line is connected with the rod, and an oscillatory tablet is connected with and actuated by the line.

The record is made on the tablet by a marker, in the shape of a pencil, which is carried by the vertically movable rod and is caused to move over the tablet. If the surface over which the rod is carried is level and smooth, the tablet will remain stationary, and the pencil will trace a vertical line on the sheet of paper on the tablet. If the ground slopes up or down, the tablet will swing back and forth, and the pencil will trace on the paper the exact configuration of the surface of the ground passed over by

the operator.

Edward P. Nole, Belle Vernon, Pa. Combined Water Tank and Heater .-The object of this invention is to provide a device a dapted to be used in connection with a gas heater for boilers, whereby the flow of gas will be automatically cut off or reduced when the water in the boiler reaches a certain temperature, the device being capable of manual operation when desired. It comprises a tank, a heater connected thereto, a gas supply pipe having a valve seat. a tubular casing conneoted with the supply pipe and arranged contiguous to the tank, a valve co-operating with the valve seat, an expansible member arranged within the tubular member and connected with the valve, and straps extending around the tank for securing the tubular member thereto.

Hugh J. Dykes, Salt Lake City. Utah. Ore Consentrator.—The invention of this patent has for one of its objects to provide an ore concentrator into which the material, in the form of pulp and slime, is distributed upon an inclined pan or table, and caused to move thereon so that the heavier metallic portions of the mass being treated shall pass upward, while the slime and lighter particles shall pass downward and out at the lower end of the table. In carrying out the invention the table is given three motions; viz., a longitudinal jolting or concussive movement, a lateral rocking movement, and a lateral reciproion or ''tail shake'' at its lower or tail end. Means are provided for adjusting the longitudinal inclination of the jar, and for regulating the extent of lateral tail shake, as well as for regulating the degree of the rocking movement.

Addison B. Carll, New York, N. Y. Taree patents.—The invention of the first patent is for an attachment for ratchet drills, and has for its object to provide a drill attachment for bracing or backing up ratchet drills,

and one designed particularly for use when boring holes into the sides of a boiler tank or similar object, the device being readily varied in length for firmly engaging the wall or side of such object at a point diametrically opposite that at which the drill is boring. It comprises a shank adapted to be clamped around the inner end of a drill, a brace arm extending from the shank longitudinally of the drill to a point adjacent the outer end thereof, and a guiding block at the outer end of the arm to guide and support the tool of the drill.

The object of the invention of the second patent is to provide an adjustable tap for forming threads on the interior of pipes, and it comprises a mandrel having a head provided with a series of converging longitudinal V-shaped grooves, a series of cutters having tapered inner edges fitting within said grooves and provided with hooks at their inner ends, and an adjusting collar mounted on the mandrel and connected to the hooks for expanding said cutters.

The invention of the third patent has for its main object to provide a wrench having a head mounted on the handle in such a manner that the jaws can be turned to any angle required. A further object is to provide a handle which is so constructed that the device can be used as an offset, angle or square wrench to thus take the place of separate wrenches. Improved means are provided for detachably connecting the head to the handle so that a variety of heads may be used interchangeably for fitting nuts of different sizes and shapes.

William St. Peter, Damar, Kansas. Reach Connection for Vehicles.—The invention covered by this patent has for its object to provide a coupling for vehicle reaches, whereby the rear truck of the vehicle can be readily adjusted to accommodate the vehicle to various loads. The coupling com-prisises upper and lower plates carried by the hounds, horizontally swinging reach engaging jaws arranged between and pivoted thereto and extending beyond the plates, the extended portions of the jaws having flat sides adapted to bear against the sides of the reach, pins projecting from the flat inner sides of the jaws and adapted to engage openings in the reach, and means for locking the jaws in their engaged position.

William Brenton, Mineral Point. Wisc. Metal Polish.—The object of the invention of this patent is to provide an efficient metal polish, which is easily applied, requires little labor to polish, leaves the metal with an extremely high finish and is adapted to be used on metals, such as silver, nickel, brass and the like. The compound comprises whiting, soapstone, barytes, and American vermillion combined in a dry powdered state and applied to the metal in the ordinary manner.

Elwin Hoxworth, Waco, Texas, inventor: Gilliam H. Patrick, Waco, Texas, assignee of one-half interest. Shade and Curtain Bracket.—One of the objects of this patent is to provide a shade and curtain bracket support and shade guide, the guide being of such construction and arranged in such relation to the shade that the latter will always roll straight, and thereby avoid any danger of becoming damaged. The invention comprises, in combination with a support, a curtain pole bracket detachably secured to the upper end thereof, a shade bracket detachably secured to the support below the curtain pole bracket, a recess formed in one side of the support below the shade bracket, and a resilient guide for the shade detachably secured in the said recess and retained therein against movement by the expansive force thereof.

William Miller, Westfield, N. J. Two patents.—The invention of the first patent relates to a process for recovering soakage from barrels, casks and the like, and its main object is to enable barrels, which have contained lard, oils. and the like to be more rapidly and thoroughly cleaned and the soakage or substance absorbed by the wood extracted and recovered without injuring the barrels and by the use of a simple apparatus. The process consists in piercing the barrels to provide vent holes for the escape of air, arranging the barrels bung holes down in a tier in a closed receptacle, and subjecting the barrels to a steam bath, whereby the soakage is caused to exude from the barrels and run from the bung holes thereof into the receptacle.

The invention of the second patent has for its object to provide an efficient means for recovering alcohol or other volatile substance from empty barrels or casks, and to provide a process whereby the substance contained in the wood of the empty barrel is caused to be thoroughly extracted before the wood is affected by the heating medium, and the substance recovered without injury to the barrel. The process consists in forming openings in both heads of each barrel, in addition to the bung hole, arranging the barrels one upon the other in a closed receptacle, and locating heating means below the barrels to cause a circulation of warm air through the same, whereby the soakage is rapidly evaporated from the wood without injuring the barrels.

Frank Sherkel, Hoboken, N. J. Snap Hook.—The principal object of the device covered by this patent is to provide a snap hook, having an efficient means which will lock the hook in a closed position, and also assist in opening the hook and when open will hold the hook in its opened position. The snap hook comprises a body, a hook pivoted to the body, a dog pivoted to the body and engaging the hook, and a single spring engaging both the hook and the dog, said spring being adapted to actuate the dog to engage the hook and hold the same in an open position or lock the hook in a closed position.

Joseph H. Stewart, Bluff City, Tenn. Bow Facing Oar. Assignor of one-half to Jacob Thomas, Bristol, Tenn.-The invention covered by this patent relates to bow facing oars, and has for its object to provide an axially rotatable blade portion of an oar, and abutments arranged in the path of travel of the blade and adapted to contact with a projection thereon, so that the blade shall be rotated through an arc of about 90 degrees just prior to its movement in either direction, whereby an automatic feathering action of the blade is secured. The invention comprises a shank pivoted at one end to a handle, a blade axially rotatable upon the shank, pins projecting out from the blade at approximately right angles to each other, spaced abutments over which the blade passes, which abutments are adapted to engage the pins to rotate the blade from a vertical to a horizontal position or the reverse, and a stop preventing the blade from turning in one direction beyond a vertical position.

George L. Allen, Waurika, Okla. Filter.—One of the objects of the invention covered by this patent is to provide a water filter, adapted to be employed in connection with a service pressure system, and to be arranged in a ditch and covered with earth, whereby it is prevented from freezing in winter, and is maintained in a cool condition in summer. The filter casing is provided at each end with receptacles containing charcoal or other filtering

material, one receptacle to be placed at the inlet opening of the casing and the other at the outlet opening, and held in position by other loose filtering material interposed between the two receptacles.

Thos. B. Erwin and Henry C. Meyer, Britt, Iowa. Fire Escape. Two patents.—The invention of the first patent has for its object to provide a portable fire escape of the flexible chute type adapted to be stored inside of a building, and capable of being arranged quickly for use at one of the windows of the building, so as to permit the occupants thereof to descend rapidly without injury. The invention comprises an inclined flexible chute provided at its upper end with means for rigidly attaching it to the inside of a window and having anchoring means at its lower end, said chute being tapered downwardly and having downwardly converging side walls arranged to check the speed of a person as he approaches the lower end.

The invention of the second patent is an improvement on the first, one of which improvements resides in a convenient means for enabling a person to enter the upper end of the chute from a window without danger of falling, and to afford a hold until a person has fully entered the chute. The improvements consists of a transverse bar or member arranged to extend across a window frame, and side frames connected with the bar or member and with the chute, and having guard rails located at opposite sides of the upper end or mouth of the chute to enable the latter to be entered with safety.

Charles A. Besser, Mt. Pleasant, Iowa. Collapsible Form for Building Culverts.—The invention of this patent relates to a collapsible core or form designed for use in constructing concrete or other culverts, drains, and the like, the concrete being applied to the outside of the form in any approved manner, and the form removed after the concrete has set. The core or form may be used for constructing culverts of different sizes, so that one form will answer the purpose of a number, this result being obtained by the employment of a plurality of curved sheet metal plates so assembled and connected with operating means that the form will preserve its cylindrical shape throughout its range of adjustment. By a novel arrangement of screw-actuated collars and links connected therewith and with the plates of the core, the plates are drawn inwardly or outwardly without having any longitudinal movement, and at the same time the plates slide freely over one another while preserving the shape of the form.

Robert H. Brooks, Ruston, La. Crude Oil Valve Burner.—This invertion has for its object to provide a crude oil burner designed particularly for use in stoves for heating and cooking with crude oil, and adapted to control by means of a single valve the admission of both crude oil and air to the burner, whereby complete combustion is assured, and also adapted to be adjusted to secure the desired feed of fuel for either a slow preventing any leakage of oil into the burner, and when open stopping the oil from flowing backward into the pipes. The device comprises a burner including a valve casing having oil and air inlets, and provided with a nozzle, and a rotary plunger for controlling the flow of oil and air from the inlets to the nozzle, the plunger being provided with peripheral grooves tapered longitudinally, whereby upon rotation the plunger is adapted to reduce the area of the grooves in said inlets.



Advertisements inserted in this column for 10 cents a line (about 7 words) each insertion. Every new subscriber sending \$1.00 to The Inventive Age will be entitled to the Age one year and to five lines three times FREE. Additional lines or insertions at regular rates.

For Sale—Two Patents No. 995,563, dated June 20, 1911, and No. 976,289, dated Sep. 22, 1910. Address, A. M. Porter, R. R. No. 3, Box 30, Amsterdam, Mo. nov

Gr Sale-U. S. Patent No. 995.633, dated June 20, 1911. Logging Bunk. Will sell outright or shop rights. For particulars write, Joseph N. Peterson, Ellison Bay. Wisc. nov

POR SALE—Patent No. 995,536, dated June 20, 1911, Syrup Skinmer. Address, Andrew J. Hardin, Quincy, Fla. nov

FOR SALE-U. S. Patent No. 995,974, dated June 20, 1911, Improved vacuum dust tank; cash sale. Interested parties, address, J. C. Lewis, Hotel De Soto, Mansfield, Ohio.

FOR SALE—Patent No. 958,461, dated May 17, 1910, Detachable Wagon Skate. Can change carriage or wagon into sleigh in a few minutes. Further particulars address, Max Aubertel, R. F. D. No. 1, Box 364 A. Edgewater, Colomor

For SALE—Pateut No. 885,557. An improved bolt-holder for preventing the rotation of bolts while the nuts are being removed or tightened up. An indispensable tool for the blacksmith and farmer. Address, C. T. Tarver, Hollywood, Ark.

For Sale-Patent No. 993,879, dated May 30, 1911. Shop rights for sale. This economy hay rack can be mounted upon the bolsters of a wagon and removed by one man. Can be put in out of the weather in a space one and one-half feet wide by sixteen feet long. For particulars address, William H. Rodebaugh, Cedarville. Illinois.

For Sale — Canadian Patent No. 132,640, dated April 25, 1911; U. S. Patent No. 974,571, dated Nov. 1, 1910. Attachment for wheelbarrows. All reasonable offers will have my personal attention. Address, Wm. C. Johnson, Fence, Wisc.

FOR SALE or on royalty—Reissue Patent No. 13,258. A self-rotating projectile for smooth bore and rifle guns. The most complete invention of the age for sportsmen or heavy guns. Will be demonstrated to interested parties at Appalachian Exposition, Knoxville, Tenn. Sep. 2, to Oct. 1, 1911. Address, H. H. Hendrix, R. D. No. 2, Powell Station, Tenn.

POR SALE-To highest bidder. Oscillating Water Motor. For further particulars write, August Anderson, Ponderay, Idaho. oct

FOR SALE-U. S. Patent, No. 989,068, dated April 11, 1911. Wind Mill. Will sell for cash to the highest bidder. Address, Alfred J. Shirley. Rothsay, Minn.

FOR SALE—Patent No. 989,012. Portable Out Door Sleeping Apartment. Screened Bed and Tent Combined. Insect and rain proof. California reserved for one year. Address, Mrs. Jennie Hoyt, Santa Paula, Cal. oct

FOR SALE—Patent No. 986,704. Device for attaching holdback straps to vehicle thills. Will unhitch themselves when you forget to do it. Correspond with Dr. T. E. Gallup. Santa Clara, California.

POR SALE or exchange — Patent on combined track brace and nut lock. Will exchange good real estate or automobile. Any reasonable offer considered. Address. C. Maunders, Jackson, Minn.

FOR SALE — Patent No. 992.862. Onion Harvester. Machine is propelled by a gasoline engine. Cost of building is small. Easy to operate. The cleaned onions are delivered in the crates, Address, T. De Young, Jr, South Holland, Illinois,

FOR SALE—Patent No. 986,295. Vertical Upsetting Press. Would sell outright, or dispose of same on a royalty basis. For full particulars, write Justus Johnson, 413 Goepp Street, Bethlehem, Pa. sep

FOR SALE — Aquaplane Patent No. 989,604, dated April 18, 1911, Will propel boats 60 miles per hour. Address, S. M. Howard, Gettysburg, South Dakota.

GOR SALE- Several good patents. Direct from owners. No commission. Address, Advertisers Co-operative Association, Chicago, Ill. sep

FOR SALE—No. No. 970,940. Derrick and Hay Fork. This hay fork and derrick will unload hay from wagon to the stack, or to hay mow in barn. It will also load the hay out of the stack onto the wagon. Can be used successfully in conveying wheat that has been cut with a header, from stack to the machine when thrashing. Address, John A. Miller, Harding, S. Dakota.

F or Sale-Patent No. 945,812, dated Jan. 11, 1910. Cheapest, simplest and most efficient hand-operated sanitary cow-milking machine, Good proposition, for sale or on royalty. Address, R. D. Roth, Gettysburg, Pa. aug

For Sale — Patent No. 887.552. Improved Tongs. Two ways of using them. Can be made to bold large or small articles. Address. James Veno, Vancouver, B. C., Canada. oct

For Sale-Patent No. 986,460. Animal Trap. Catches all kinds of small animals. Will sell to highest cash bidder. Address, H. J. Hagge, R. F. D. No. 2, Ogden, Iowa. sep

FOR SALE-Patent No. 983,952, dated Feb. 14, 1911. Machine for removing weeds and performing other cultivating operations. Address, Gus Thomas, Lind. Washington.

Ror Sale—Patent No. 966.641, Corn Husker. Can be worn on either hand. Very comfortable to the user. Can remove ears of corn in any position Address, Ronsseau H. Atkinson, Goldengate, Ill.

FOR SALE-U. S. Patent No. 975,537; also Canadian Patent. Animal trap that kills the animal. Best Marten and Mink trap out. Light to pack. Made of wire. Investigate. Address, John Kubes, Broadview, Mont.

FOR SALE-JU. S. Patent No. 974,411: Canadian Patent No. 129,289. Combination Rail Brace and Nut Lock. Prevents low joints, rails spreading, rails turning laterally. All nuts locked against turning movements, avoiding expense of track walkers. Can be used at either joints or intermediate points to best advantage, thus avoiding serious wrecks. The best combination brace yet invented. Will consider any reasonable offer, either outright or royalty and part cash. Address, C. Maunders, Jackson, Minn.

WANTED.

WANTED—To exchange information with persons having patents on railroad appliances. I have sleeping cars, ventilating appliances, anti-rail spreads, loose rail indicators, iceless refrigerators, and oval window. Give detailed information in these lines only. Address, Joseph A. Shires, 1921 Sherman Street, Denver, Colo.

WANTED—To correspond with manufacturers regarding the manufacture and placing on the market of two good patents having practically an unlimited field for their operation. Address, P. O. Box 30, Falling Spring, W. Va.

WANTED a Company in the U. S. to manufacture my saw-fitting device, patent No. 972,789, dated Oct, 10, 1910. Also a company in Canada to manufacture same device, Canadian Patent No. 124,345, dated March 8, 1910. I will sell either or both of said patents. Address, C. R. Pierce, Rainier, Washington.

Wanted-Agency propositions. What have you to sell? Address, Ernest Morse, Luverne, Minn.

WANTED—Two or three persons with some capital to correspond with a patent owner of a new meritorious article. Practice on model very satisfactory, Will not sell patent but will join in company, Address, F. D. F. Box 28, Waterbury, Conn.

MANTED-Not for sale but want a company to manufacture my manure loader on royalty, Patent No. 918,095. Address, Lars C. Peterson, Osage City, Kansas.

Wanted-Partners for foreign patents on whip socket lock, for share in patents, U. S. patent allowed. Key remains in lock when whip is loose. One-half turn of key locks whip, When whip is locked key is removed. The harder the pull the tighter the grip. For particulars address, Clarence S. Skinner, Payne, Ohio. sep

ANTED—Four (4) men to loan me \$100 each, for four years, at 6 per cent to help me to push four (4) good paying toy inventions, for which I will return to each of them their loan, and I will give also to each loaner 10 per cent of all the income from sale of said patent inventions in whatever way I may dispose of said patents, Here is your chance. Who will accept. Address, E. W. Barton, No. 35 Carroll St., Binghamton, N. Y. sep

WANTED—A company to manufacture a bag holder made of sheet iron. U.S. Patent No. 968,349, dated August 23, 1910. Will have patent for Canada in a short time. Address, Louis Hanson, Cottonwood, Idaho. sep

Electrical Review and Western Electrician

Published weekly from the center of the industry, this publication is in the best possible geographical position to gather and present the most important and interesting news of the entire electrical industry.

SUBSCRIPTION PRICE

U. S. \$3.00 per year, Canada \$4,00 per year, Foreign Countries \$6.00 per year. Sample Copy Free

It is seen and read by practically every buyer of electrical material in this country and abroad. Advertising rates on application.

ELECTRICAL REVIEW PUBLISHING CO., 507 Marquette Bldg., CHICAGO.

A NEW BOOK FOR INVENTORS Patents and How to Make Money out of Them,

By W. B. Hutchinson.

This is the only book published, giving a detailed and full account, from the author's actual experience, of just what steps are necessary from the time the invention is conceived, to the time it is sold, with a clear and concise resume of the law and practice, legally and commercially, of trade-marks and copyrights. It also tells accurately How and What to invent. How to sell Inventions, Place them on the Market, Interest Capital in them, and to successfully Promote a Stock Company. It also contains an index of forms worth double the price of the book to any one interested.

ELEGANTLY CLOTH BOUND.

GOLD STAMPED. \$1.00 Postpaid.

Sent with one subscription to AGE for \$1.50 Or will sell separately.

Address— The Inventive Age Pab. Co., 918 F St., N. W. WASHINGTON, D. C.

HALF-TONES ZINC ETCHINGS ...DESIGNS...

LANNIAN

ENGRAVING

COMPANY

PROCESS ENGRAVERS, ILLUS
TRATORS, DESIGNERS.
TRADE-MARK DRAWINGS
EXECUTED.

"Quality and Speed"

POST BUILDING

Fourteenth St., and Pennsylvania Ave. N. W Phone, Main 673

A VALUABLE OFFER TO INVENTORS.

A Complete Outfit of Printed Matter for \$20.

- 1. A zinc etching of your invention for use in printing letterheads, envelopes, circulars, etc.
 - 2. One thousand printed circulars.
- 3. Five hundred envelopes with your name and address printed in the corner.
- 4. Five hundred letterheads with a cut of your invention, and your name and address neatly printed thereon.
 - 5. A list of manufacturers in the special line of your invention.
- 6. A form letter to be followed in conducting your correspondence with manufacturers and others.
- 7. Four dozen deeds useful in selling state, county, town or shoprights. Address:—

INVENTIVE AGE PUBLISHING CO. Dept. O. WASHINGTON, D. C.

ATTENTION INVENTORS!

LISTS OF MANUFACTURERS FURNISHED.

We have increased our facilities for furnishing lists of manufacturers, and now cover every line of industry. The names are obtained from well known directories.

Our charge for each list is one dollar.

In ordering, please state specifically the class of manufacturers desired.

Address: Inventive Age Pub. Co., Dept. M. 918 F. St., Washington, D. C.

Every subscriber when sending \$1.00 is entitled to a free advertisement, not exceeding five lines, o any patent in which he may be interested. The ad, will be inserted three times,

THE INVENTIVE AGE PUBLISHING CO., Washington, D. C.
I herewith enclose \$1.00 for one year's subscription to
"THE INVENTIVE AGE."
I also enclose ad. for insertion in the (Patents for Sale*) (Want*) column of your paper.
NAME
P. O

*Please indicate in which column you want the ad. luserted.

N. B.—Remit in the way most convenient.

STATE.....

37 Inventive age

Established 1889. Published monthly by

THE INVENTIVE AGE PUBLISHING CO.,

National Union Building, 918 F Street, N. W., Washington, D. C.

THE INVENTIVE AGE is sent, postage prepaid, to any address in the United States, Canada. Mexico, Hawaii, and Porto Rico, for ONE DOLLAR a year; to any other country, postage prepaid, ONE DOLLAR AND TWENTY-FIVE CENTS.

Correspondence with inventors, mechanics, patentees, and manufacturers, is invited. The columns of this journal are open for the discussion of such subjects as are of general interest to its readers.

Technical matter is particularly desired. We want practical information from practical men.
THE INVENTIVE AGE is independent.

Special facilities for furnishing cuts of any patented device together with descriptive article. Business specials 10 cents a line each insertion: 7 words to the line. No advertisement less than 25 cents.

Address all communications to

THE INVENTIVE AGE PUBLISHING COMPANY,
WASHINGTON, D. C.

Entered at the Post-office as 2nd class matter.

WASHINGTON, D. C., SEPTEMBER 1, 1911.

WHAT IS AN INVENTION?

In another portion of this paper we have reprinted an article from the Metallurgical and Chemical Engineering Journal of New York City, under this heading, which is so instructive and enlightening that we consider it entitled to more than passing mention, particularly since just at this time there is a disposition within the Patent Office to raise the standard of "What is an Invention" to such an extent as to defeat the claims of many inventors.

The Patent Statute provides that "Any person who has invented or discovered any new and useful art, machine, manufacture, or composition of matter, or any new and useful improvement thereof * * * * may upon payment of fees required by law obtain a patent therefor." The word "discovered" has been adjudged to have the same meaning as the word "invented".

It is plain that novelty and utility must characterize the subject of a patent, hut they alone are not sufficient to make anything patentable, for the Statute provides that things to he patentable, must be invented things. as well as new and useful things. The courts have therefore declared that not all improvements constitute inventions and are entitled to protection as such, but that to be so entitled, a thing must be the product of some exercise of the inventive faculties. As it is impossible for one to explore the hidden recesses of an inventor's mind to determine whether the product of his hand was the result of the exercise of mechanical skill, or of exercise of his inventive faculties, it follows that what is to be considered an invention and worthy of a patent must be covered by negative rules, rather than by affirmative rules.

With these facts in mind it is easy to see the troubles that beset an attorney in obtaining a patent from

the Patent Office. There are fortythree different examining divisions in the United States Patent Office, each presided over by a Principal Examiner who is a law unto himself, so far as determining what is and what is not an invention. If he decides adversely to the applicant, an appeal can be taken to the Board of Examiners-in-Chief, and from their decision, if the Examiner is affirmed, to the Commissioner of Patents in person, and finally, if the Commissioner decides with the two lower tribunals, to the Court of Appeals of the District of Columbia. If the Examiner decides that the alleged invention submitted in the application for patent is a new and useful invention, then his act in allowing the application for the patent is accepted. subject however, to being declared valid or invalid by the courts in an infringement proceeding.

It is not difficult to understand that the forty-three different Principal Examiners may and do have different standards in determining what is an invention. The standards of some Examiners are high, while the standards of other Examiners are low. Because of this fact, a patent may be granted on a simple device by one Examiner, and in a different division a patent may be refused on an equally simple device, although the same degree of invention in both cases was present. Inventors as a rule do not understand this. They see patents granted on things which they think ought to act as precedents for the allowance of patents to them, though any one who has had long experience before the Patent Office knows that no patent is a precedent for any other patent. Each particular device must stand on its own merits and be judged by such standards as are available.

As stated before, there is no way of determining affirmatively if invention has been exercised in the creation of a certain article, machine, process or composition of matter. In the article to which we have referred, the writer states: "The conception of an invention can come from either a flash of intuitive thought, or from a long course of hard reasoning, or it can come from an artistic blending of the two, a combination of mental action." This is an excellent statement of an abstruse proposition, and seems to find full support in the United States Supreme Court.

Mr. Justice Matthews, in an opinion delivered in the Supreme Court in 1885, used language which some writers think established an affirmative rule by which to determine the presence or absence of an invention in every case. Speaking of a simple device which the court held not to be an invention, he said:

"It seems to us not to spring from that intuitive faculty of mind put forth in search for new results or new methods, creating what had not before existed or bringing to light what lay hidden from vision; but on the other hand to be the suggestion of that common experience which arose spontaneously, and by a necessity of human reasoning, in the minds of

those who became acquainted with the circumstances with which they had to deal."

Walker, in his excellent treaties on patents, commenting on this decision, said: "This language may be thought to mean that whatever new and useful process, machine, manufacture, composition of matter, or design is produced by intuition is an invention, and that whatever such thing is produced hy reason is not an invention. But such an interpretation of the language would not be right. Intuition may sometimes reach to a single brilliant result, but intuition can never conceive or correlate the mazes of movements and mechanisms which constitute a modern automatic machine. To enforce such a rule as that hypothetically implied in the language of Justice Matthews, would he to deny invention to those marvelous combinations of numerous metallic devices which compose American automatic machinery, and which work with such complexity and yet with such precision that they seem themselves to be endowed with reason. The court does not deny invention to all the products of pure reason in the useful arts. It merely finds want of invention in those things which are conceived spontaneously and by a necessity of human reasoning in the minds of those who have their attention directed to the subject."

In a later case the Supreme Court speaking by Mr. Justice Brown, in attempting to define the meaning of the word "invention," said: "The truth is the word cannot be defined in such a manner as to afford any substantial aid in determining whether a particular device involves an exercise of the inventive faculty or not. In a given case we may he ahle to say that there is present invention of a very high order. In another we can see that there is lacking that impalpable something which distinguishes invention from simple mechanical skill. Courts adopting fixed principles as a guide, have by process of exclusion determined that certain variations in old devices do or do not involve invention; but whether the invention relied upon in a particular case is anything more than ordinary mechanical skill is a question which cannot be answered by applying the test of any general definition."

It is not the purpose of this article to discuss the negative rules, which operate by a process of exclusion to determine the presence or absence of in. vention in every case. This would extend the limits of this article beyond our present purpose. However, dropping the metaphysical and considering the practical application of the question, it seems to be the fate of inventors, where any strikingly novel and useful invention is created, to be met with the assertion, either on the part of the Examiner of the Patent Office, or of some court, or of some infringer, that his invention was an "obvious one." In many of the actions upon application for patent, this question of what is obvious plays an important part, the Examiner holding that certain alleged inventions were obvious adaptations or developments from prior patented devices. The writer in the article referred to treats this matter of "what is obvious" in a very intelligent way. We wil' quote further: "In the welter and toil of developing an invention the "merely obvious" is usually discovered with difficulty. In fact, what hindsight calls the obvious is usually the antoym of obvious. For, if the obvious was so eternally simple and infernally apparent, why did not some one else discover and prove its existence and value?"

England's great epic poet, Milton, made a plea for the inventor along the same line when he said

"The invention all admired, and each how he To be the inventor missed, so easy it seemed Once found, which yet unfound most would have thought impossible,"

These words of the great poet need to be impressed on the minds of examiners, courts and others, who would rob the inventor of his just contribution to the arts and industries by holding that the invention created was "merely obvious" and was the work of a mechanic and not worthy of patent protection.

A WARNING TO INVENTORS.

There is a class of attorneys, and quite a numerous class, who make it a practice never to send copies of conflicting patents to their clients when submitting reports as to patentability. The reason for this is that they are afraid to lose business. They fear that if their clients see how closely other inventors have approached their ideas, that they will give up the thought of applying for patents. When an invention is submitted for examination to an attorney of that class, he reports the invention as patentable, without, however, disclosing to the inventor by copies of patents just how small a part of the inventor's invention is patentahle. The invention may be an improvement in car couplings, and it may turn out, as a result of the examination, that only the construction of the locking pin is patentable, whereas the inventor may have thought that the entire invention was novel. Instead of sending the client copies of prior patents and showing him that other inventors have approached his invention, the attorney reports the invention patentable, leading the inventor to understand by the report that the entire invention is patentable. As few inventors understand the interpretation given to the claims of patents, it is not surprising that when he sees the entire invention disclosed in his application, or in his patent, though only a small feature is claimed, he thinks his application or his patent embraces everything that he wishes to protect. It is only after the patent has issued and after he has made an effort to sell the patent to some manufacturer who is posted in patents, he learns to his sorrow that the patent is a narrow one, that the claim is restricted to a minor feature, that the principle on which the patented invention works is old and public property, and that instead of

inventing anything really new and useful in the arts, the inventor had been working in an old field, and that all the money spent in procuring the patent is money thrown away. One way to get even with such attorneys is to refuse to proceed with the application for patent until a search has been made, which will disclose the full state of the art. The best way, however, is for the inventor to employ an attorney who by his practice shows that he is not afraid of losing business, and who is willing to give his client the same full and complete information about the prior patented devices that the attorney has acquired through the search of the Patent Office records. If inventors would always insist upon obtaining the information about prior patents, it would be the best thing for them in the end. The small fee charged for the examination to disclose the state of the art or the prior patented devices, would, in many instances, save the entire cost of the patent. Besides if the inventor is fully advised at the outset before the application, he can change his invention and remodel the device so as to avoid what has alreadly been patented.

Gasoline Jelly.

A chemist of Birmingham, England, has invented a means of converting gasoline into a stiff, white jelly, in which condition it can be used as fuel for automobiles. The conversion is effected by adding a small percentage of soapstone and alcohol. An economy of 30 per cent is claimed for the solidified gasoline over the liquid in its natural state: and also that more jelly than liquid can be carried in the same space. A cube of solidified gasoline, when being vaporized either in a hot pipe or in the ordinary way, does not cause liquefaction of the mass, the heat simply causing a slow formation of vapor which is consumed in the engine.

Suction Turbine Propellers.

The Coanda aeroplane, recently shown in Paris, has several radically new features, one being the method of propulsion. The body is long and fishlike, and the forward end encloses a suction turbine, which takes the place of the ordinary propeller, and forces the machine forward by drawing in and forcing back the air.

The same principle has been adopted in the construction of a motor sleigh for a Russian magnate. It consists of a cigar shaped hull carried on four runners, with a suction turbine mounted in front. This is driven by a 40 horsepower motor, and is expected to give high speed. Steering is accomplished in this device by causing either end of a curved bar to bear on the snow, the sleigh turning on this as a pivot.

Telephones and Telegraphs as Life Preservers.

Presence of mind in tapping a telephone line saved the life of a snow-bound lineman in the West, during the last winter. He was climbing a mountain side in pursuit of his duty, when he was caught in a snow slide, and but for the fact that he happened to strike a telephone pole, would have been carried over cliffs into a chasm below. Clinging to the pole, it occurred to him to climb it and tap

the wire with his pocket telephone set. A party was dispatched to his assistance, and he was finally rescued by the linemen, who worked their way hand over hand along the pole line, by means of a swinging seat suspended on the telephone cable.

Another interesting episode occurred in a very different part of the world-Northern Africa. A French trader was following a line of telegraph poles to a settlement in central Algeria, when he was surprised by two robber Arabs. The trader ran to nearest pole and managed to climb it before his pursuers reached him. Recalling the days when with another school mate he had put up a small telegraph line, he took out his knife and began tapping Morse signals on the wire. They did not, as in the case above cited, bring him help; but the Arabs thought the sound some mysterious message, and fearing that aid might be summoned, they fled in haste, leaving the Frenchman to make his report that he had saved his wares by playing at telegraphy.

A Life Saving Device.

The Bureau of Mines in this city has been examining an apparatus called the pulmotor, with which men supposed to be dead have been brought back to life. It is useful in all cases of gas asphyxiation, and people thought to be drowned have been revived by it. It consists of a cylinder in which oxygen is stored under a pressure up to 125 atmospheres; a blowing and suction valve, actuated by two accordion bellows: a face mask which covers the mouth and nose, making an air tight connection with the face, to which mask are attached two flexible tubes, leading to the blowing and suction valves. When the mask is made air tight on the face and the oxygen turned on, the apparatus works automatically, Oxygen is forced into the lungs until a pressure of four degrees of water gauge is reached, which pressure is in connection with one of the bellows, and owing to the elongation of the bellows under this pressure, the valves are turned and the pressure in the lungs released. The suction valve immediately begins operation and continues to exhaust the oxygen from the lungs until a vacuum of four inches of water gauge is reached. The oxygen used for creating this partial vacuum elongates the second bellows and changes the position of the valves, allowing the oxygen to be again forced into the lungs, etc. Attached to the lid of the pulmotor box is an inhalation device that may be substituted for the pulmotor as soon as the subject under treatment recovers the action of the lungs. This device saved the lives of three men who were passed upon as dead after an accident in an Ohio mine. They were restored to consciousness after three hours work, and are well today. In another instance, an explosion that killed 150 men, the rescue car, with a pulmotor, arrived twenty-four hours afterwards. A man was found near the entrance of the mine whose body showed slight evidence of warmth. The pulmotor was put to work, and the man resuscitated. So remarkable have been the results of its use that the pulmotor has been installed in all the rescue cars and at the rescue stations by the Bureau of Mines.

Moving Pictures in Color.

The phrase "the eighth wonder of the world" has been applied to a variety of subjects that have appealed to the imagination of the beholders, since the hanging gardens of Babylon were brought low and Diana of the Ephesians ceased to be called great. The telegraph, the telephone, the phonograph, X-rays, the flying machine, have all been so denominated. and each has held its place for a time, till some new aspirant for the honor has come forward. A recent issue of the Outlook declares that the time has come when the latest claimant for this position, the flying machine, will have to dispute its pretensions with another new arrival-namely, the instantaneous photograph of moving objects in their natural colors.

These are not the hand colored cinematograph pictures which we have all seen, in which each of the thousands of separate films that make up a group of pictures is laboriously colored by the brush of a deft worker, the process consuming a week or ten days of steady labor at the least. Nor are they the Lumiere process of colored photographs on glass, which astonished the world a year or two ago with the first real color photography, and were everywhere acclaimed as the greatest advance in this line since the days of Niepce and Daguerre. The Lumiere method required from sixty to a hundred times longer exposure than the ordinary photographic plate, and instantaneous work was out of the question. But here is a process that produces color motion pictures in one-half the time required for the taking of the ordinary instantaneous motion picture, with practically absolute fidelity to the real coloration of rapidly moving objects. The Lumiere process was wonderful: the Kinemacolor process, which is the name given to the new motion pictures, is marvelous.

One of the first pictures exhibited by this process—which has just been introduced into America—was a harbor scene at sunset. A ship lay at anchor, her white paint glistening, gay bunting flying from every mast, small boats swarming about her, ladies in bright dresses sharing the decks with the sailors. The rich colors of the evening sky made almost a Turneresque background, reflected with wonderful vividness in the shimmering water. The scene was realistic in the last degree-and the colors in all their natural hues were painted by science, and not by art.

Even more original and beautiful are the pictures of flowers. Roses, lilies, pansies, dahlias, nasturtiums and others were not only seen in all the brilliant beauty of fresh bloom, but actually as opening their blossoms and changing their tints accordingly before one's eyes, from the tightly closed bud to the full panoply of the most gorgeous Chinese lily. Truly a

child who sees these wonderful things must not only have his soul awakened to beauty, but to the knowledge that science brings us close to the divine.

And how are these marvels accomplished? Not, as above said, by the artificial coloring of the film. Nor yet, as in the Lumiere process, by the action of chemicals on a starch grain color screen superimposed on the film. Strange as it may seem, the original film in this new method—the Kinemacolor process—is simply black and white. This was proved by running the film through the machine as an ordinary motion picture. brilliant colors of a moment before were reduced to the dullness of a flat monochrome. The secret of the marvel lies partly in the interposition between the film and the screen on which the image is thrown, of a rapidly revolving disc of colored gelatine. The primary colors of which all hues are composed are represented on this disc. The process—the invention of two Englishmen-involves, before this, the taking of the photographs on specially sensitized films with two alternating filters which pass to the film, in the order of their luminosity, the colors white, yellow, orange, red, green, blue, violet, indigo and black. Thus all the colors of the spectrum are accurately recorded on the film through the interposition of the gelatine filters. The first snapshot, for instance, in the rapidly moving film would be taken through the red filter and would represent red and its allied colors; the second exposure would be through the green filter and would embody green and its allied colors. The time employed in taking these two pictures is the same as that used in taking one for the ordinary motion picture. When the pictures come to be enlarged and reflected through the bioscope, the red and green gelatine screens in front of the film are changed in the same order as when the exposures were made. Thus, if the machine were operated very slowly, we should see first a red-tinted picture, then one in the green tint. Owing to the optical phenomenon known as persistence of vision, however, when the pictures are run through rapidly, the eye mingles the colors just as it mingles the separate images in the black and white motion picture, and the result to the vision is a picture with the objects in motion and also in natural colors.

In truth fairy stories are sometimes outdone by the accomplishments of practical men. The imagination of our ancestors produced folk tales and myths; our imaginations are creating wonder stories out of metal, glass and light.

To keep themselves posted in the progress of the arts in which they are interested, inventors and manufacturers should subscribe for the INVENTIVE AGE, which publishes a list of all patents issued each month. The low subscription price and the character of the publication entitle it to the support of all the inventors of the country.



CLASSIFIED list of Patents issued during the month appears in each issue of the Inventive Age. This keeps inventors and manufacturers posted in the art in which they are most interested. —We will send, postpaid, to any address, printed copies of any U. S. patent, with specifications and drawings. upon receipt of 10 cents per copy.—Please give correct data in ordering.—Address.

THE INVENTIVE AGE PUBLISHING CO., 918 F St., N. W., Washington, D. C.

LIST OF PATENTS

Issued June 27, 1911.

MECHANICAL PATENTS.

Continued from August Number. Line serting and easting machine. Mail-ponch-transferring apparatus.

J. W. Repple
Measure for use on bowling-greens, Tape.

E. Fitton et al.
Measuring gases, Device for taking garmont.

Measuring instrument, Electric.

E. Thomson et al.
Melting and reduction furnace, Electric.

Melting and reduction furnace, Electric.

Metal bodies, Means or apparatus for determining and indicating stress in.

Metal-pickling apparatus.

M. G. Clayton
Metal-pickling apparatus.

M. W. Heyman
Mine safety appliance.

R. W. Wheedock
Meter-register compensating for prossure
variations.

R. W. Heyman
Mine safety appliance.

R. W. Heyman
Mine safety appliance.

R. W. Heyman
Mine safety appliance.

R. W. Heyman
Motor-control.

E. F. W. Alexanderson
Motor-control system.

W. T. Sears et al.
Motors, Controlling device.

C. E. Zix
Motors, Controlling system for reversing
S. H. Koefer
Music-leaf turner.

M. G. Landing
Musical instrument, Mechanical.

F. G. Lynde
Nafler, Loose.

M. H. Cummings
Net, Trup.

M. F. G. Lynde
Nafler, Loose.

M. H. Chomshaw
Odometer-train plate.

J. K. Srewart
Oiling device. Track.

D. F. Robinson
Orne-stral transposition-chart.

Oven, Baker's.

J. Linedecke
Ozonizing and compressing process.

A. A. Lockwood
Oven, Baker's.

J. Linedecke
Ozonizing and compressing process.

C. S. Bradley
Packing-box machine.

J. R. P. Revford
Paper-box machine.

J. R. P. Revford
Paper-box machine.

J. R. P. Revford
Paper-box machine.

A. C. D. F. Robinson
Orne-stral transposition-chart.

M. Verdier
Ore-roasting machine.

L. P. Revford
Paper-box machine.

A. R. Wildey
Ores, Magnetic preparation of.

L. P. Revford
Paper-box machine.

L. P. Revford
Paper-poxel machine.

L. P. Revford
Paper-poxel machine.

L. P. Revford
Paper-poxel machine.

L. R. Device of al.
Paper-ceutting machine.

L. P. Revford
Paper-poxel machine.

L. A. Barrack
Pipe. Bending

J. H. Taylor

L.

Rail Inbricator, Guide- B. W. Givens Rail-support on tos. T. Donahue Rail the and fastener G. A. Belknap Railway-spreader O. F. Jordan Railway-spreader O. F. Jordan Railway-spreader O. F. Jordan Railway-spreader O. F. Jordan Railway-switches, Interlocking and detector-bar mechanism for T. H. Otley Railway-fie. Concrete J. F. Herbert Railway-fie. Concrete J. F. Herbert Railway-freek. J. F. Herbert Railway-freek. J. F. Herbert Railway-freek. J. F. Herbert Railways, Electrically-controlled safety appliance for K. T. and F. T. Jones Razor-stiffener G. E. Weck Razor-stiffener J. J. Mechan Reel D. E. V. Sanders Refrigerator D. D. Granklin Refrigerator J. D. O. Franklin Refrigerator T. M. Lawrence et al. Rifle J. R. A. Guindon Road and making it J. E. A. Paterson Rotary engine J. H. VanDeventer Rotary engine J. H. VanDeventer Rotary engine J. M. Foy Rosary kilm T. A. Edison Safety-pin. R. B. Barker Sandephering-machine O. C. Wysong Saw base, Gang-T. S. Wilkin Sawgoperating mechanism, Gang-Rawguide J. H. Schuring Saw-operating mechanism, Gang-T. S. Wilkin Saw oscillating means, Gang-T. S. Wilkin Saw oscillating means, Gang-T. S. Wilkin Saw-operating mechanism, Gang-T. S. Wilk for (2 pats.) S. Elliott Stick-pin A. R. Sunde

Talking machines, Picture-exhibiting de-

vice for (2 pats.).......H. C. Matthews

Washing-machine gearing, W. I. Schoolover
Water by ozone, Apparatus for purifying.

C. S. Bradley
Water-heater.

E. R. Brodton
Water-pressure, Means for utilizing,

E. R. Brodton
Water-recorder.

Water-recorder.

Water-wheel Turbine

S. W. Reece
Wave-motor

H. P. Molander
Weather-strip.

J. Kammerer
Welding-machine, Electric. J. T. Hall et al.
Well-drill, Multiple-tool.

J. N. Lewis
Wolts, Machine for operating on

J. Gouldbourn
Wheel

J. B. Frost
Wheel-rim support.

E. V. Hartford
Weip-socker, Locking.

B. R. Morrison
Wind-shield.

J. A. Carlson
Winding-drum.

R. P. McLanghlin
Work-supports, Mechanism for controlling.

G. A. Ambler
Wrapping-machine.

H. S. Wilson
Wrapping machine, Package-Issued July 4, 1911.

MECHANICAL PATENTS.

Adhesive fabric. F. J. Gleason Advertising device, Street car. C. V. Hill Aerial machine. G. A. Owen et al. Aerial vessel, (2 pats.) W. Wait Aevoplane R. Leidorf

Agricultural machine, Automobile
D. S. Hatlee Air-brake retained, Automatic
Air-brake train-line coupling, Automatic
Air-brake train-line coupling, Automatic W. H. Weaver Air-craft propellerW. J. Lehmann Air drying apparatusJ. B. King et al.
Air motorA. Kolsky Air. PurifyingA. K. Cross
Airships, Propelling and balancing apparatus for J. A. Rennice
Air drying apparatus. J. B. King et al. Air motor. A. Kolsky Air, Purifying. A. K. Cross Airships, Propelling and balancing apparatus for. J. A. Rennice Alligator wrench, Adjutable. E. H. Smith Anhydrous ethyl aleohol, Production of
Armature coreJ. H. Hess
Ash dumper C. P. Bressel Anger bit J. W. Caldwell
Automobile rim holding and tire pumping
Automobilist's tool. F. S. Baird et al.
Ax W. S. Robinson Bacteriological oven or incubator
Anhydrous ethyl aleohol, Production of J. H. Hess Armature core . J. D. Ihlder Ash dumper . C. P. Dressel Auger bit . J. W. Caldwell Automobile heater . L. A. Briget Automobile rim holding and tire pumping device . E. C. McCullough Automobilist's tool . F. S. Baird et al. Awls, Making . L. A. Casgrain Ax . W. S. Robinson Bacteriological oven or incubator
Bag lifter J. Lines G. L. Hoyt
Baking apparatusS. E. Selleek Baking apparatusF. A. Calley
Balance, PortableF. Reichmann Barrel cleaning machine. G. P. Knoll et al.
Bearings, Retainer for ball and roller
Bag lifter
Blind, Sliding windowA. H. Ehlert Blower, exhauster and the likeT. Kundtz
Blower, pump. compressor, &e., Centrifugal
Boat A. G. LeMeille Boat II. M. Van Weede
Boiler flue cleaner M. J. Braum Roiler furness Steam H. A. Pennenbaugen
Boiling purposes, Alarm indicator for
Rolt keeper, DoorA. W. Ekberg Bolts, screws, &c., Mechanism for makingF. F. Deeds Rook leaves, Method of and machine for creasingW. Sparks Bottle capping machineT. J. Levey Bottle filling apparatus. F. L. Caris et al. Bottle, Non-refillableG. C. Jenner et al.
ing
creasing
Bottle filling apparatus. F. L. Caris et al. Bottle, Non-refillable. G. C. Jenner et al. Bottle, Non-refillable II. B. Rodgers et al. Box. W. W. Baird Box-making machine, Pasteboard.
Box
Boxes, Machine for securing neek-strips to E. Jagenberg Bracelet-band H. L. Allen Brake beam W. D. Forsyth Brake shoe E. T. Dickinson Brake shoe adjustment L. Zink Brassiere C. R. De Bevoise-Brick press J. R. Tackett Bridle blinker C. C. Kronse
Boxes, Machine for securing neek-strips to E. Jagenberg Bracelet-band H. L. Allen Brake beam W. D. Forsyth Brake shoe E. T. Dickinson Brake shoe adjustment L. Zink Brassiere C. R. De Bevoise-Brick press J. R. Tackett Bridle blinker C. C. Kronse
Boxes, Machine for securing neek-strips to E. Jagenberg Bracelet-band H. L. Allen Brake beam W. D. Forsyth Brake shoe E. T. Dickinson Brake shoe adjustment L. Zink Brassiere C. R. De Bevoise-Brick press J. R. Tackett Bridle blinker C. C. Kronse
Boxes, Machine for securing neek-strips to E. Jagenberg Bracelet-band H. L. Allen Brake beam W. D. Forsyth Brake shoe E. T. Dickinson Brake shoe adjustment L. Zink Brassiere C. R. De Bevoise-Brick press J. R. Tackett Bridle blinker C. C. Kronse
Boxes, Machine for securing neck-strips to E. Jagenberg Bracelet-band H. L. Allen Brake beam W. D. Forsyth Brake shoe Adjustment L. Zink Brassiere C. R. De Bevoise Brick press J. R. Tackett Bridle blinker C. C. Kronse Brooch or belt-pin keeper C. B. Reed Brush, Separable C. A. Wallace et al. Bullet Separation C. E. Blackburn Burglar alarm C. E. Blackburn Burglar alarm G. A. Childs Cable termial (2 pats) F. B. Cook Calculating machine V. J. Odhner Calk for horses, Detachable L. D. Jones
Boxes, Machine for securing neck-strips to E. Jagenberg Bracelet-band H. L. Allen Brake beam W. D. Forsyth Brake shoe Adjustment L. Zink Brassiere C. R. De Bevoise Brick press J. R. Tackett Bridle blinker C. C. Kronse Brooch or belt-pin keeper C. B. Reed Brush, Separable C. A. Wallace et al. Bullet Separation C. E. Blackburn Burglar alarm C. E. Blackburn Burglar alarm G. A. Childs Cable termial (2 pats) F. B. Cook Calculating machine V. J. Odhner Calk for horses, Detachable L. D. Jones
Boxes, Machine for securing neck-strips to E. Jagenberg Bracelet-band H. L. Allen Brake beam W. D. Forsyth Brake shoe Adjustment L. Zink Brassiere C. R. De Bevoise Brick press J. R. Tackett Bridle blinker C. C. Kronse Brooch or belt-pin keeper C. B. Reed Brush, Separable C. A. Wallace et al. Bullet Separation C. E. Blackburn Burglar alarm C. E. Blackburn Burglar alarm G. A. Childs Cable termial (2 pats) F. B. Cook Calculating machine V. J. Odhner Calk for horses, Detachable L. D. Jones
Boxes, Machine for securing neck-strips to E. Jagenberg Bracelet-band H. L. Allen Brake beam W. D. Forsyth Brake shoe Adjustment L. Zink Brassiere C. R. De Bevoise Brick press J. R. Tackett Bridle blinker C. C. Kronse Brooch or belt-pin keeper C. B. Reed Brush, Separable C. A. Wallace et al. Bullet Separation C. E. Blackburn Burglar alarm C. E. Blackburn Burglar alarm G. A. Childs Cable termial (2 pats) F. B. Cook Calculating machine V. J. Odhner Calk for horses, Detachable L. D. Jones
Boxes, Machine for securing neck-strips to E. Jagenberg Bracelet-band H. L. Allen Brake beam W. D. Forsyth Brake shoe Adjustment L. Zink Brassiere C. R. De Bevoise Brick press J. R. Tackett Bridle blinker C. C. Kronse Brooch or belt-pin keeper C. B. Reed Brush, Separable C. A. Wallace et al. Bullet Separation C. E. Blackburn Burglar alarm C. E. Blackburn Burglar alarm G. A. Childs Cable termial (2 pats) F. B. Cook Calculating machine V. J. Odhner Calk for horses, Detachable L. D. Jones
Boxes, Machine for securing neck-strips to E. Jagenberg Bracelet-band H. L. Allen Brake beam W. D. Forsyth Brake shoe Adjustment L. Zink Brassiere C. R. De Bevoise Brick press J. R. Tackett Bridle blinker C. C. Kronse Brooch or belt-pin keeper C. B. Reed Brush, Separable C. A. Wallace et al. Bullet Separation C. E. Blackburn Burglar alarm C. E. Blackburn Burglar alarm G. A. Childs Cable termial (2 pats) F. B. Cook Calculating machine V. J. Odhner Calk for horses, Detachable L. D. Jones
Boxes, Machine for securing neck-strips to E. Jagenberg Bracelet-band H. L. Allen Brake beam W. D. Forsyth Brake shoe Adjustment L. Zink Brassiere C. R. De Bevoise Brick press J. R. Tackett Bridle blinker C. C. Kronse Brooch or belt-pin keeper C. B. Reed Brush, Separable C. A. Wallace et al. Bullet Separation C. E. Blackburn Burglar alarm C. E. Blackburn Burglar alarm G. A. Childs Cable termial (2 pats) F. B. Cook Calculating machine V. J. Odhner Calk for horses, Detachable L. D. Jones
Boxes, Machine for securing neck-strips to E. Jagenberg Bracelet-band H. L. Allen Brake beam W. D. Forsyth Brake shoe Adjustment L. Zink Brassiere C. R. De Bevoise Brick press J. R. Tackett Bridle blinker C. C. Kronse Brooch or belt-pin keeper C. B. Reed Brush, Separable C. A. Wallace et al. Bullet Separation C. E. Blackburn Burglar alarm C. E. Blackburn Burglar alarm G. A. Childs Cable termial (2 pats) F. B. Cook Calculating machine V. J. Odhner Calk for horses, Detachable L. D. Jones
Boxes, Machine for securing neck-strips to E. Jagenberg Bracelet-band H. L. Allen Brake beam W. D. Forsyth Brake shoe Adjustment L. Zink Brassiere C. R. De Bevoise Brick press J. R. Tackett Bridle blinker C. C. Kronse Brooch or belt-pin keeper C. B. Reed Brush, Separable C. A. Wallace et al. Bullet Separation C. E. Blackburn Burglar alarm C. E. Blackburn Burglar alarm G. A. Childs Cable termial (2 pats) F. B. Cook Calculating machine V. J. Odhner Calk for horses, Detachable L. D. Jones
Boxes, Machine for securing neck-strips to E. Jagenberg Bracelet-band H. L. Allen Brake beam W. D. Forsyth Brake shoe Adjustment L. Zink Brassiere C. R. De Bevoise Brick press J. R. Tackett Bridle blinker C. C. Kronse Brooch or belt-pin keeper C. B. Reed Brush, Separable C. A. Wallace et al. Bullet Separation C. E. Blackburn Burglar alarm C. E. Blackburn Burglar alarm G. A. Childs Cable termial (2 pats) F. B. Cook Calculating machine V. J. Odhner Calk for horses, Detachable L. D. Jones
Boxes, Machine for securing neck-strips to E. Jagenberg Bracelet-band H. L. Allen Brake beam W. D. Forsyth Brake shoe Adjustment L. Zink Brassiere C. R. De Bevoise Brick press J. R. Tackett Bridle blinker C. C. Kronse Brooch or belt-pin keeper C. B. Reed Brush, Separable C. A. Wallace et al. Bullet Separation C. E. Blackburn Burglar alarm C. E. Blackburn Burglar alarm G. A. Childs Cable termial (2 pats) F. B. Cook Calculating machine V. J. Odhner Calk for horses, Detachable L. D. Jones
Boxes, Machine for securing neck-strips to E. Jagenberg kaneelet-band H. L. Allen Brake beam W. D. Forsyth Brake shoe F. T. Dickinson Brake shoe adjustment L. Zink Brassiere C. R. De Bevoise-Brick press J. R. Tackett Bridle blinker C. C. Kronse Brooch or belt-pin keeper C. B. Reed Brush Separable C. A. Wallace et al. Bullet S. G. Wray Burglar alarm C. E. Blackburn Burglar alarm C. E. Blackburn Burglar alarm C. E. Blackburn Burglar alarm G. A. Childs Calculating machine V. J. Odhner Calk for horses, Detachable . L. D. Jones Camera shutter G. E. Schuele Can-body forming, locking and soldering machine W. H. H. Stevenson Can cover Milk W. L. Coates Can cinter G. C. Perey Can lock Milk G. P. Prager Cane jnice treating apparatus E. W. Deming Car F. X. Malocsay Car couplings, Chain hole cover plate for W. E. Coffin Car door attachment F. S. Burbee et al. Car door, Grain C. S. D. Perry Car fender, Street E. S. Miller Car safety appliance W. G. Moofley Cars and the like, Drop spike and cornerbind for logging F. C. Bailey et al. Carbureter F. G. Folberth Carbureter A. Winton et al. Carbureter A. Winton et al. Carbureter L. Anderson Cash register with distant indication.
Boxes, Machine for securing neck-strips to E. Jagenberg bacelet-band. H. L. Allen Brake beam. W. D. Forsyth Brake shoe F. T. Dickinson Brake shoe adjustment L. Zink Brassiere C. R. De Bevoise-Brick press J. R. Tackett Bridle blinker C. C. Kronse Brooch or belt-pin keeper C. B. Reed Brnsh, Separable C. A. Wallace et al. Bullet S. G. Wray Burglar alarm C. E. Blackburn Burglar alarm C. E. Blackburn Burglar alarm C. E. Blackburn Calculating machine V. J. Odhner Calk for horses, Detachable . L. D. Jones Canculating machine W. H. H. Stevenson Can cover Milk W. L. Coates Canculating machine W. H. H. Stevenson Can cover Milk W. L. Coates Can conter G. C. Perey Can lock, Milk G. P. Prager Care juice treating apparatus E. W. Deming Car F. X. Maloesay Car couplings, Chain hole cover plate for W. E. Coffiu Car door attachment F. S. Burbee et al. Car door, Grain C. S. D. Perry Car fender, Street E. S. Miller Car safety appliance W. G. Moofley Cars and the like, Drop spike and cornerbind for logging F. C. Bailey et al. Carbureter F. G. Folberth Carbureter F. G. Folberth Carbureter L. Anderson Cash register with distant indication W. F. Schweiger
Boxes, Machine for securing neck-strips to E. Jagenberg bacelet-band. H. L. Allen Brake beam. W. D. Forsyth Brake shoe F. T. Dickinson Brake shoe adjustment L. Zink Brassiere C. R. De Bevoise-Brick press J. R. Tackett Bridle blinker C. C. Kronse Brooch or belt-pin keeper C. B. Reed Brnsh, Separable C. A. Wallace et al. Bullet S. G. Wray Burglar alarm C. E. Blackburn Burglar alarm C. E. Blackburn Burglar alarm C. E. Blackburn Calculating machine V. J. Odhner Calk for horses, Detachable . L. D. Jones Canculating machine W. H. H. Stevenson Can cover Milk W. L. Coates Canculating machine W. H. H. Stevenson Can cover Milk W. L. Coates Can conter G. C. Perey Can lock, Milk G. P. Prager Care juice treating apparatus E. W. Deming Car F. X. Maloesay Car couplings, Chain hole cover plate for W. E. Coffiu Car door attachment F. S. Burbee et al. Car door, Grain C. S. D. Perry Car fender, Street E. S. Miller Car safety appliance W. G. Moofley Cars and the like, Drop spike and cornerbind for logging F. C. Bailey et al. Carbureter F. G. Folberth Carbureter F. G. Folberth Carbureter L. Anderson Cash register with distant indication W. F. Schweiger
Boxes, Machine for securing neck-strips to E. Jagenberg bacelet-band. H. L. Allen Brake beam. W. D. Forsyth Brake shoe F. T. Dickinson Brake shoe adjustment L. Zink Brassiere C. R. De Bevoise-Brick press J. R. Tackett Bridle blinker C. C. Kronse Brooch or belt-pin keeper C. B. Reed Brnsh, Separable C. A. Wallace et al. Bullet S. G. Wray Burglar alarm C. E. Blackburn Burglar alarm C. E. Blackburn Burglar alarm C. E. Blackburn Calculating machine V. J. Odhner Calk for horses, Detachable . L. D. Jones Canculating machine W. H. H. Stevenson Can cover Milk W. L. Coates Canculating machine W. H. H. Stevenson Can cover Milk W. L. Coates Can conter G. C. Perey Can lock, Milk G. P. Prager Care juice treating apparatus E. W. Deming Car F. X. Maloesay Car couplings, Chain hole cover plate for W. E. Coffiu Car door attachment F. S. Burbee et al. Car door, Grain C. S. D. Perry Car fender, Street E. S. Miller Car safety appliance W. G. Moofley Cars and the like, Drop spike and cornerbind for logging F. C. Bailey et al. Carbureter F. G. Folberth Carbureter F. G. Folberth Carbureter L. Anderson Cash register with distant indication W. F. Schweiger
Boxes, Machine for securing neck-strips to E. Jagenberg bacelet-band. H. L. Allen Brake beam. W. D. Forsyth Brake shoe F. T. Dickinson Brake shoe adjustment L. Zink Brassiere C. R. De Bevoise-Brick press J. R. Tackett Bridle blinker C. C. Kronse Brooch or belt-pin keeper C. B. Reed Brnsh, Separable C. A. Wallace et al. Bullet S. G. Wray Burglar alarm C. E. Blackburn Burglar alarm C. E. Blackburn Burglar alarm C. E. Blackburn Calculating machine V. J. Odhner Calk for horses, Detachable . L. D. Jones Canculating machine W. H. H. Stevenson Can cover Milk W. L. Coates Canculating machine W. H. H. Stevenson Can cover Milk W. L. Coates Can conter G. C. Perey Can lock, Milk G. P. Prager Care juice treating apparatus E. W. Deming Car F. X. Maloesay Car couplings, Chain hole cover plate for W. E. Coffiu Car door attachment F. S. Burbee et al. Car door, Grain C. S. D. Perry Car fender, Street E. S. Miller Car safety appliance W. G. Moofley Cars and the like, Drop spike and cornerbind for logging F. C. Bailey et al. Carbureter F. G. Folberth Carbureter F. G. Folberth Carbureter L. Anderson Cash register with distant indication W. F. Schweiger
Boxes, Machine for securing neck-strips to E. Jagenberg bacelet-band. H. L. Allen Brake beam. W. D. Forsyth Brake shoe F. T. Dickinson Brake shoe adjustment L. Zink Brassiere C. R. De Bevoise-Brick press J. R. Tackett Bridle blinker C. C. Kronse Brooch or belt-pin keeper C. B. Reed Brnsh, Separable C. A. Wallace et al. Bullet S. G. Wray Burglar alarm C. E. Blackburn Burglar alarm C. E. Blackburn Burglar alarm C. E. Blackburn Calculating machine V. J. Odhner Calk for horses, Detachable . L. D. Jones Canculating machine W. H. H. Stevenson Can cover Milk W. L. Coates Canculating machine W. H. H. Stevenson Can cover Milk W. L. Coates Can conter G. C. Perey Can lock, Milk G. P. Prager Care juice treating apparatus E. W. Deming Car F. X. Maloesay Car couplings, Chain hole cover plate for W. E. Coffiu Car door attachment F. S. Burbee et al. Car door, Grain C. S. D. Perry Car fender, Street E. S. Miller Car safety appliance W. G. Moofley Cars and the like, Drop spike and cornerbind for logging F. C. Bailey et al. Carbureter F. G. Folberth Carbureter F. G. Folberth Carbureter L. Anderson Cash register with distant indication W. F. Schweiger
Boxes, Machine for securing neck-strips to E. Jagenberg bacelet-band. H. L. Allen Brake beam. W. D. Forsyth Brake shoe F. T. Dickinson Brake shoe adjustment L. Zink Brassiere C. R. De Bevoise-Brick press J. R. Tackett Bridle blinker C. C. Kronse Brooch or belt-pin keeper C. B. Reed Brnsh, Separable C. A. Wallace et al. Bullet S. G. Wray Burglar alarm C. E. Blackburn Burglar alarm C. E. Blackburn Burglar alarm C. E. Blackburn Calculating machine V. J. Odhner Calk for horses, Detachable . L. D. Jones Canculating machine W. H. H. Stevenson Can cover Milk W. L. Coates Canculating machine W. H. H. Stevenson Can cover Milk W. L. Coates Can conter G. C. Perey Can lock, Milk G. P. Prager Care juice treating apparatus E. W. Deming Car F. X. Maloesay Car couplings, Chain hole cover plate for W. E. Coffiu Car door attachment F. S. Burbee et al. Car door, Grain C. S. D. Perry Car fender, Street E. S. Miller Car safety appliance W. G. Moofley Cars and the like, Drop spike and cornerbind for logging F. C. Bailey et al. Carbureter F. G. Folberth Carbureter F. G. Folberth Carbureter L. Anderson Cash register with distant indication W. F. Schweiger
Boxes, Machine for securing neek-strips to
Boxes, Machine for securing neek-strips toE. Jagenberg Bracelet-band

Clamping device...........D. D. Thompson

	_
Cleaning apparatns, J. L. and II. Wallace Clock]
Cloth, Apparatus for extracting liquid from. D. Gessner Cloth-cutting gageD. L. Baumgarten	I
Cloth-cutting gage. D. L. Baumgarten Cloth-entting machine. M. Wolff Clothes sprinkler. A. L. Connelly Clutch, Fluid. A. F. Hall et al.	1
Clurch, Friction A. Master Cock, Ball G. R. Yancey Cock box, Stop E. L. Walcott Coke oven G. E. Behr, Jr. Collar, Convertible A. M. Hajck	l
Collar, Convertible A. M. Hajek Collecting and stacking machine G. W. Mascord Commutator for electric machines	I
Commutator for electric machines	1
Composite sheet material, Means for making. E. H. Angier Compress chocking mechanismW. Hill	I
Concrete cross-tie, Reinforced	I I I
Conveyors, Switch for gravity	1
Compress chocking mechanism. W. A. Butchart Concentrator. W. A. Butchart Concrete cross-tie, Reinforced. W. D. Forsyth Concrete pile. G. C. Vernon-Inkpen Conveyors, Switch for gravity. M. C. Schwab Core-barrel, Expansible. C. F. Murray Core, Collapsible. J. B. Walker Cork, Heating and molding subdivided. M. Grunzweig	Î I I
Corn gathering and husking machine C. E. Balkema CorsetJ. H. Odenbret	I
Cork, Heating and molding subdivided. M. Grunzweig Corn gathering and husking machine. C E. Balkema Corset. J. H. Odenbret Cotter-pin. J. A. Germonprez Cotton chopper. R. T. Simmons Cotton chopper. M. Prokschl Cotton chopper. cultivator. and weeder. Combined. T. J. King Cotton cleaner. A. L. Treese Cotton-gin breast. P. B. Barnes Cream separator and churn. A. Fay Cross-tie. W. D. Forsyth Cross-tie. Metal. R. Wheeler Cultivating machine, Land. J. Muggli CnIvert, Corrugated. F. J. Feldt Curling iron. J. P. Wulff Curtain pole ring and clamp. Combined. Cuspidor. S. Sibo	I
Cotton chopper, cultivator, and weeder, Combined. T. J. King Cotton cleaner. A. L. Treese	((,
Cross-tie	(((
Cultivating machine, Land J. Muggli Culvert, Corrugated F. J. Feldt Curling iron L. Wulff	(((
Curtain pole ring and clamp, Combined B. Schneider CuspidorS. Sibo	(
Cutter. E. C. Rinner Die holder Releasing F 8 Shields	((
Disinfecting deviceT. H. Rowland Disnersing recentagle Single delivery	(
Ditching, pipe-laying, and irrigating appara-	(
Door construction. W. E. Snaman Door, Grain. P. A. Aurness Door securer. J. W. Gavin Drawer-locking mechanism, Desk.	(
	(((
Drawing or making lines on wearing apparel, Apparatus for K. Meyer Dredge	((
Drawing-board, printing frame, and the like. T. Curr. Jr. Drawing or making lines on wearing appared. Apparatus for K. Meyer Dredge W. Ferris et al. Drier L. E. Rodgers Drying method K. Reyscher Drilling rig, Rotary C. Bell Drinking fountain T. C. Murphy Drip-pan. Automatic alarm. J. F. C. Bendt Driving mechanism. F. H. Richards Driving mechanism. Hydraulic differential L. M. J. C. Levavasseur Dust collector J. C. Zehfus Dye, Tatrakisazo W. Herzberg et al. Dyeing yarn J. C. Hebden et al. Eggs. Preserving B. F. Birkett Electric apparatus, Vapor O. O. Kruh. Electric arcs. Method ef and apparatus for deviating J. J. Thoresen et al.	((()))
Drippan, Automatic alarm. J. F. C. Bendt Driving mechanismF. H. Richards Driving mechanismF. H. Richards	111
Dust collector L. M. J. C. Levavasseur Dust collector J. C. Zehfus Dve. Tatrakisazo W. Herzberg et al.	i
Dyeing yarnJ. C. Hebden et al. Eggs, PreservingB. F. Birkett Electric apparatus, VaporO. O. Kruh.	I
Electric apparatus, Vaporl. T. H. Dempster Electric arcs, Method of and apparatus for	l l I
deviatingJ. J. Thoresen et al. Electric circuit closerC. F. Lewis Electric heaterB. G. lamicson et al. Electric machine, DynamoH. G. Reist	1
Electric machines, Bridging block for dynamo	l l I l
Electric resister	l I I
Electric tool	I
Electric switch. J. C. Walden Electric tool. C. B. Coates Electric wire ferminal. G. L. Herz Electrical distribution system. E. W. Stull Electrical fixtures, Tool for removing or attaching. B. D. Walker et al. Electrical switch, Pendant. W. J. Gagnon Electrical switch, Pendant. W. J. Gagnon	l I
nsed in forming molds employed in the are of	I
bined A. J. Nye Elevator suspension means. E. P. Kilcoyne End-cell switch J. M. Andersen	I
Engine. E. James Enginne-controlling apparatus, Automatic electrically governed. II. D. Hinckley	1
Engine lubricatorU. S. Greer Engine safety crank, ExplosiveJ. D. Bowne	I
Electrical switch. Pendant. W. J. Gagnon Electrotyping, Composition of matter to be used in forming molds employed in the arc of. G. E. Dunton Elevating and fruit-cleaning machine. Combined A. J. Nye Elevator suspension means. E. P. Kilcoyne End-cell switch J. M. Andersen Engine Engine. E. James Engine. E. James Engine Lubricator J. H. D. Hinckley Engine lubricator J. W. S. Greer Engine safety crank. Explosive J. D. Bowne Engines. Device for supplying oil to internal combustion P. D. Johnston Engines, Electric and fluid pressure controller for internal combustion. C. O. Pearson	I
Engines, Means for controlling reversible	İ
Evaporator for petroleum oils or other liquids	J
Evaporator for petroleum oils or other liquids	I
sheets, Apparatus forC. L. Wells et al. Fabric, Preparing backgrounds on pile	I
Fabric, Preparing backgrounds on pile R. T. Swenning Fabric pressing machineT. Patchett et al. FanC. F. Oesterreicher FanJ. F. Hanrahan et al. Feed regulatorF. II. Headen Feed regulatorK. Dongan	I
Feed regnlator. F. H. Headen Feed regnlator. K. Dongan	Î

	<u> </u>	1 1		-	1.		¥	ابنا	. *
Feeder, Ponitry. Feeding water t	o b	oile	rs.	Мe	J. ans	T. :	Fre	eman	
Fence post File, Document. Filter beds an power driven Filter cleaning a	d t	he	lik	e,	I . E.	I. ton	J. . l ati	Fritz Bauer e or	
Filter cleaning :	ippa	rai	ns,	I	5. - 01	G. ga P.	s. Ke	Ham stner	•
Fire alarm Fireman's hood. Fireproof door of Fireproof windo Fish screen Fish trap and p	ol's	hnt ash	ter	E	F. . I	W. 1.	V: Mc(Job	inton Clond	
Flowers, Preserv	atio	on 	of .	nat . L.	ura E	1. ; . O:	stra Ball	inder Jr.	
Fluid pressure of Flume coupling. Flying machine. Flying machine. Flying machine. Flying machine. Flying machine. Folding box. No Folding table.	Me	tal.		niy	F. P.	M. T. O. al.	ew E M A	comb amal ggert oody Fenn	
Folding box. No Folding table. Folding table. Folding table. Foot, Apparatus of a Friction device. Furnace. Furnace. Furnace. Furnace. Furnace Garment clasp. Garment clasp. Garment suppor Gas check. Gas cut-off, An Gas engine. Gas package, Ac Gas producer. Gas producer. Gas producer. Gas producer. Gas producer. Gas roducer. Gas roducer. Gear. Transmiss Gearing. Gearing for crohines. Glass clamp. Pic Glazier's tool. Globes and shad er for. Goods-holder.	velt	y	i C	min	ing	thas B. L. I. L. I.	r e se e Ho: L. (M le s	tal, tal, rdich Traig oraff diape	
Friction device, Fnrnace Furnace, Furrow openers,	Ant	ista 	itie ir i	or	.J. V.V	J. V. : C. k	O''. Mai Ca	roole nhire rlson	
Gain eutter Garbage pulveriz Garment clasp Garment suppor	er f	or	sew	ers.	II.	. F . G. H. . R.	Бед W: Т: - С	eman Freen Ullick aylor orton	
Gas check Gas cut-off, An Gas engine Gas engine, Two Gas generator Gas package, Ac	tom cyc	J. atic le . lenc	S. 	l l	Doi t. .('. E.	nale E. R. F. M.	St St Her Jer He	t al. aples adrix akins oover	
Gas producer Gas producer Gear. Transmiss Gearing	ion.		11. J.	H. B R H. \	Bt \ Gi B	icki I Isoi aus	nan Vsla Tarr n e schl	i, Jr. ikson iham it al. icher	
Gearing for ci- chines	nbro ute. es o	oide f a	ry rtif	or i	si F. Î li	lmil P. F. Zim glit	ar Sel Me me s, l	ma- norr Avoy rman Iold-	
er for Goods-holder Governor for m	arin	ie, :	.j. stea	N. m	M ens	F. aco aco sine	W. n e	Gore t al.	
Glazier's tool. Globes and shad er for. Gloods-holder. Governor for in Grain-drier. Grain or like d Grain shocker. Grain shocker. Grain shocker. Grain shocking Grape tic. Grate bar. Grease cup, Rat Grinder. Steak. Grounding clam Gummer. Hammer, Pneum Hammer, Pneum Hammock couch. Harrow cart.	rier	hin	10	iv.	ri. II. II.	R. SI G. I . J. nan	Brayb ayb K E. (inser augh idder Olson oman tal.	
Grease cup, Rat Grinder, Steak Grounding clamp Gummer, Pneum Hammer, Pneum	chet		M.	II.	G. Be	W. . 11 odle T. . S.	Lei Lei Clei Ole um;	owen Short et al. nelin Iliam tcher	
Hammock couch. Handling loose Harrow cart	mat	eri:	ıls.	\\D\ \\D\	1 par . R . J.	L. I atu B.	Holis 1 V. Bu	ilfeld for Ogle infen	
Harrow cart. Harvester, Stripp Hat pin construe Hat pin holder. Hat retainer. Heat distributin Heater or the H Heating device. Heating system. Heddle Hedge trimmer. Holster, Automa Horse blanket fi Horse detaching Horse power. Hose, Armored. Hose, Metallic. Holster	g sy	ste	m.	. R.	(), (), (), (), (), (), (), (), (), (),	B. W. B.	Per Ta B. C II c Pe	shall aylor 'arty et al. eurce regor	
Heating system. Heddle	1310		Т. . П.	S. C.	ila Ski J.	dav inne Ke	vay utr utr	. Jr. et al. naun t al.	
Hoe Hog hoist Holster, Automa Horse blanket fi Horse detaching	tic ister de	gun ier vice			F. F.	ii. N. S	Sch Au Au har	Frigg midt idley mith dson	
Horse power Hose, Armored. Hose, Metallic Hosiery Hot air register.		i	j. :	Mul . E	. J. con . V . R.	K. Proy Vitz C B. X	Be enr enr lat	oland tal. nann Blood hews	
Hosiery. Hot air register. Hotel register. Hydraulic compram Hydraulic press. Hydraulic press.	ress	W	ith nde	(l	oul	S. ole	Du 1. V I. V	ncan eting Vebb Vebb	
Hydrocarbon fo); ()	con	ibus	. A. stio: I	a. E.	. I. Pi J.	ons Ops Wis	aker uing ggins	
yielding Insole cutter and Insulating bushi Insulating the t	u. s l pa: ing. wis:	ster ted		A. (I nds	K1:	ue iges E. š C. of	Stoc Stoc Nic	t al. kton chols etric	
ram !!ydraulic press. !!ydraulic press. !!ydrocarbon to !iquid (Reissu- !!ydrogen peroxi- yielding. !Insole cutter and !Insulating bushi- Insulating the to wires, Device !Insulator. !Internal combust !Internal combust !Internal compounds.	for ion tion	eng eng en	ine gin	J. W ee	Kr . W 7. 1 G. 0	ann S. S S. I R. f	iich . M Edw Ha	feldt loore ards rvey	
Ironing table Jewelry having	inte	elia	ng	J eabl	I	T. E. S sett	Ca L I ing,	rrick Joten Ar-	
Joist hanger Junction box Ladder Lamp. Arc	• • • •	· · ·	• • •	т.	 	. J. I. J	To To N	itenr Iyers 'chill	
Lamp Lamp. Arc Lamp bulbs. Ap	para	 itus	f	G.	. C. . M eya J	. G cua B	ting	lyers rant g in-	
Lamp bulbs, Ap candescent Lamp cluster, E Lamp, Miner's. Lamp regulator.	lecti acet	ie. ylei	Ġ. ne.	i.	B Ray	. B vso: .J.	enj u e Ta	amin tal. aylor mith	

Feeder, PonltryJ. T. Freeman Feeding water to boilers, Means for	Lasts, TurningE. J. Prindle LatchP. S. Peterson
Fence postJ. Thompson H. J. Fritz	Latch and lockG. E. Clawson Lenses, Axis register forO. M. Myers
File, DocumentE. W. Bauer Filter beds and the like, Automatic or	Level, DialJ. O. Ostman Lifting jackC. E. Hylander et al.
power driven distributer for	Line casting machineR. M. Bedell
Filter cleaning apparains, Air or gas	Liquid fuel burnerH. A. Morey Liquid fuel burning system., F. W. Tneker
Fire alarm	Look 11. Matheson Loom box motion A. R. Patten
Fireman's hoodF. W. Vinton Fireproof door or shutterE. H. McClond	Lubricating mechanismE. Fisher Mail bag catcher and deliverer
Fireproof window sash E. II. Johnson	
Fish screen	Mail boxJ. T. Johnston Male die, Built-upJ. II. Ames
Flowers, Preservation of natural	Map. Road
Fluid pressure engine A. Ball, Jr.	Massaging implementR. W. Griffith Match dispensing deviceH. Macdouald
Flume coupling, Metal. P. E. Newcomb Flying machine. V. Camal	Measuring instrument, Frequency
Flying machineF. M. Eggert	Meat cutting machineE. R. Smith
Flying machine. P. T. Moody Flying machine. O. A. Fenn	Meats, PreservingA. N. Chambers Metal strap fastenerE. E. Flora
Flying machine rudder, I'niversal	Metallic tie and rail fastenerJ. Kich Metallic tie and rail fastenerW. Dean
Folding box	Milk, DesiccatingC. H. Campbell Milk-homogenizing machine
Folding table	Milling machine tools, Means for mounting.
Foot, Apparatus for determining the shape	······ Vernet
of a	Mine door, AutomaticI. Taylor Miter boxA. Turnbull
Furnace. W. Manbire Furnace. C. Carlson	Mold
Furrow openers, Scraper for disk E. R. Beeman	Motor
Gain eutter	Mower, Gearless J. P. DeRose
Garment clasp	Mowing or reaping machine cutting appa-
Garment supporterR. Gorton Gas checkJ. S. McDonald et al.	ratusM. Armentrout MufflerJ. O. Schmitt
Gas cut-off, AutomaticR. E. Staples Gas engine	Music indicator
Gas engine, Two cycleC. F. Jenkins Gas generatorE. M. Iloover	Musical instrument rests, Clamp for
Gas package, Acetylene	Nail driving machine
Gas producerB. M. Aslakson	Neektie
Gas producerR. V. Farnham Gear. TransmissionJ. H. Gibson et al.	Nut, Cap
Gearing	Nut lock
chines	Nut lock
Glazier's tool. L. Zimmerman Globes and shades of artificial lights, Hold-	Oar lock
er forF. W. Gore	Oil burner G. M. Adams Oil burner, Wick blue flame
Goods-holderJ. N. Macon et al. Governor for marine steam engines	Oil register
T. W. Fancy	Ore classifierJ. V. Dorr Ore concentratorB. F. Cobb
Grain-drier	Ozone generator and inhaling apparatus, CombinedR. P. Guiley
Grain shocker E Olson	Packing caseII. L. Bradley Packing ring for axle box bearing
Grain shocking machineJ. Homan Grape tieA. S. Tennant et al.	J. Schmid-Roost
Grate bar	Pails or cans. Appliance for ashJ. Kohlmann
Grinder, SteakE. II. Short Grounding clampM. II. Bodley et al.	Paper and the like, Machine for feeding or separating sheets ofF. W. Vickery
Gummer	Paper board making machine: Multiple-ply. R. M. Scanlan
Hammer, Pneumatic	Paper boxes, MakingF. J. Motz
Hammock couch	Paper feeding apparatusK. Roger Paper vesselC. T. Bloomer
Harrow cart J. R. A. Ogie	Peat dredging machineW. Wielandt Pen and pencil holderJ. P. Shafer
Harvester, Stripper. C. A. A. Rand Hat pin construction. C. B. Pershall	I'en, Fountain
Hat pin holder R. W. Taylor Hat retainer	Making S. Peacock Phonograph reproducer T. A. Edison
Headlight	Piano funing hammer H. Lind
Heat distributing systemW. 11. Pearce Heater or the likeF. R. McGregor	Piano violinA. M. Carlsen Pianos, Expression lever for automatic
Heating device, Electric	Pianos, Finsh pedal door for player
Heating system	Pianos, Guard for pedal openings of
Heddle J. Kaufmann Hedge trimmer A. D. Thompson et al. Hoe J. H. Trigg	Pianos, Stringing
Hog hoist	Picker fastenerJ. M. Peckham
Holster, Automatic gun F. H. Audley Horse blanket fastener 8, 8, 8mith	Picture frame. AdjustableII. Engelmohr Picture machines. Film actuating mechan-
Horse detaching device. R. H. Richardson Horse power	ism for movingC. R. Uebelmesser Pipe coiling machineL. C. Schneider
Hose, ArmoredJ. J. Mulconroy et al. Hose, MetallicE. Witzenmann	Pipe coupling, TrainA. Metosh Pipe cutterF. A. Anderson
HosieryR. C. Blood Hot air registerJ. B. Mathews	Pipe elbow C Mares Pipe hook F. J. Lilak
Hotel registerS. Duncan Hydraulic compress with double acting	Pipe joint or coupling, Insulated
ram	Pipes or tubes, Refractory covering for metal. J. Harrington
llydraulic press	Planter H. Lueck
Hydrocarbon for combustion. Preparing	Plastic masses, Machine for treating and moldingA. Lutze
liquid (Reissue)E. J. Wiggins Hydrogen peroxid. Stable perborate mixture	Plow. E. James Plow. Wheeled J. N. Tholl
yieldingA. Klages et al. Insole cutter and pasterG. T. Stockton	Plug attachmentJ. S. Crossley Pneumatic carpet cleanerH. M. Sturgeon
Insulating bushingL. C. Nichols	Pneumatic tubes, Protective cover for
Insulating the twisted ends of electric wires. Device forJ. Krannichfeldt	Post molding machineA. W. Spooner
Insulator	Potato diggerF. Schulze Poultry house passages, Closing device for.
Internal combustion engineG. R. Harvey Iron compounds, Preparation of	Power transmission mechanism
J. T. Carrick Ironing table. E. S. Doten	Primary batteryF. H. Armstrong
Jewelry having interchangeable setting, Ar-	Printing attachment for carton crimping
ticle of. F. S. Reynolds Joist hanger. J. Tutenr	rachines. G. W. Beadle Printing machine. B. Dick
Junction boxM. J. MyersLadderT. H. ChurchillLampC. G. Myers	Printing machine offset mechanism
Lamp, Arc	Printing plates, Making ready
Lamp bulbs, Apparatus for evacuating in- candescentJ. R. Massey	Printing plates, Manufacture of
Lamp cluster, ElectricR. B. Benjamin Lamp, Miner'sG. I. Rawson et al.	Printing press, Rotary sheet
Lamp. Miner's acetyleneJ. Taylor	Printing presses, Preventing offset in
Lamp regulatorE. H. Smith Lamp shade holder, ElectricA. C. Recker	Projecting apparatus S. J. Jacobson
Lasting machineL. C. Colt	Pulley, SafetyP. J. A. Schnoor

Stoker, Underfed W. F. Smi	th W
Stoker, Underfed W. F. Smi Stoker, Underfeed T. E. Murr Stoker, Underfeed H. C. Tri Store vat W. Schm	ay pp Wi itt Wi
Stove and heating drum. Combited:	.ey Ze im ler
SuperheaterC. Howa Supporting and tipping standG. A. Mir Surgical applianceG. A. Com Surgical applianceL. W. La	.vd .or
SHEVEVING INSTRIBUTED A MAINWEST	nr
Suspender, Sock and like	al. Ac
Taper gage	$\frac{\mathrm{an}}{\mathrm{nor}} = \Lambda \epsilon$
Telephone and electric lamp, Combined. F. J. Ker Telephone and like box	bel $\frac{\Lambda_0}{\Lambda_0}$
Melanhana linau and the like Automotic	111 1
out for aerialL. W. Cari Telephone messages, Time signal for T. W. Gard Telephones, Apparatus for checking	oll Ai
Telephones, Apparatus for checking use of	he Ai
Thermometer	ch Ai
Thermometer utilizing tension of satural vapors	ier ier Ai
Time switch J. B. Fourn Time switch J. M. Chap Tire, Resilient A. A. Cu	pel An
Tire, Spring	ers A
Tobacco-treating compoundG. Be	al. An
Tire, Resilient A. A. Cur Tire, Spring J. A. Wat Tires, Vulcanizing mold for rubber	els Ai
TOOL HOUSE THE TOOL T	77 B
Tooth crown, Artificial	len B
Torque-opposing deviceN. W. Sto	rer eck Ba
Toy-building roof. F. A. Rich Track spike	ter ns B
Traction wheel drive elevator, Magnetic D. L. Lindqu	ist Be
Traction wheel drive elevator, Magnetic D. L. Lindqu Tramway system	tiue Be
Trolley W. W. Irv	eki Be
Truck . E. Lang Truck side frame, Car W. D. Foys	ille Be
Truck side frame construction, Railw car E. Bisl Tubes, rods and the like, Apparatus polishing	ay Bo lop Bo for
polishing F. We Tunneling machine G. A. Fow	rtli B ler B
polishing F. We Tunneling machine G. A. Fow Turbine II. L. Bowd Turbine blading and lining C. E. Sw Turbine blading and lining C. E. Sw Turbine installation, Water II. Palini Turn-table II. Hastin Type-cabinet M. E. Chapu Type-setting machine operating keyboa II. Humn Type-setting machine, Magazine for II. Humn Type-setting wachine, Magazine for II. Humn Type-setting carriages, Rebound check for	$rac{ ext{eff}}{ ext{son}}$ $rac{ ext{B}}{ ext{B}}$
Turbine installation, Waterl. Palint Turn-table	kas B
Type-setting machine operating keybon d. d. Humi	rd. Bo
Type-setting machine, Magazine for	nel B
II to Pale	lon B
Typewriter line-stop mechanism	illy Ba 11y Ba 11 Ba
Typewriting machine l. Fel Typewriting machine II. II. Ste	bel B
Typewriting machine	aff B
anism O. C. Ka Umbrella butt C. F. Wurs	vle B
ValveV. P. Quinn et ValveW. E. Suan	al. B
Typewriting machine carriage feed meanism. O. C. Ka Umbrella butt. C. F. Wurs Vacuum apparatus. P. C. Lit Valve. V. P. Quinn et Valve adjuster, Slide. C. W. Sn Valve, Balanced relief. H. M. Mi Valve-closure for water cocks or fanc Antomatic. V. L. Gan Valve mechanism. Engine. O. Tre	ith B ler B
AntomaticV. L. Gar Valve mechanism, EngineO. Tr	cia cier B
Antonatic. V. L. Gar Valve mechanism. Engine. O. Tro Valve mechanism for street hydrants. C. L. How Valve, Piston. J. F. Schi Valve resenting food. F. N. Vapor rectifier system. C. M. Culbers Vehicle brake. J. A. McGr Vehicle brake. J. A. McGr Vehicle indicating device. H. J. Such	wes B
Valve resenting tood. F. N Vapor rectifier system. C. M. Gr	old B
Vehicle attachmentC. M. Culbers Vehicle brakeA. McGr Vehicle indicating dayionH. I. San	ton B ath zen C
Vehicle brake	ris C ant C
Vehicle wheel W. C. C. Vending device C. E. Brid Vise Compensaries saw D. P. Da	ole C ges C
Wagon, Dumping W. H. Sc Walls, Beading and wainscoting of	off C
R. Stei Washboard J. G. Brack Watch W. E. Poi	ins C
Water-closet ventilating system	ord C
Water heater or boiler W. C. McKee Water motor S. Nel Weevil trap. Boll W. C.	son Lee C
Weighing machine	11111
Well ensing	rth C zka C
Window cleaning machineS. A. Mik Window constructionA. Fromh Window decoration and similar purpose	ool C old C ses,
Exhibiting show for	ski C
Window cleaning machineS. A. Mis Window constructionA. Fromh Window decoration and similar purpos Exhibiting show for11. Kempin Window frame, MetalT. P. Sho Window frame, &c., MetallicA. Fromh Window frame pockets, Machine for congW. B. Har	old C aut- C ris C
Window screen E. A. Ro	eitz C

Window v	entilator, Sauitary	
Wire fabric	and cutterC. A. Svenssor	1
Wrench	W. Thomas J. J. Dixor nechanism. R. B. A. Lemaigner	1

Issued July 11, 1911.
MECHANICAL PATENTS.
Adding machineJ. 8, Whitehurst Adjustable seveen and curtain attachmentW. A. Ray
Adding machine J. S. Whitehurst Adjustable sereen and curtain attachment
Aeroplanes and the like, Steering device for
Air filter and purifierH. K. Diffenderfer Airship steering mechanismJ. Schutte Ammonia from cosl, Obtaining
Amplifying tube. R. A. Boswell Angle bar straightener H. J. Erickson et ai.
Aeroplanes and the like, Steering device for
Automobile differential gearing
Automobile storage jackW. H. Hattel Automobiles and other vehicles in case of accident, Stalling device forL. O'Brien Anxiliar, mounting
accident, Stalling device for., L. O'Brien Auxiliary mounting. F. Hamilton Awning roller support. L. A. Daus Backband hook. D. S. Benfield Bag fastener. F. A. Fuller
Backband Hook B. F. A. Feinler Bag fastener F. A. Fuller Bail ear for tapered bickets C. L. Wagandt Baking intensil, Potato H. C. Doersch Balloon, Screw propelled channeled L. Hafely Barber chair A. L. Undeland Barber Chair Barber C. Hoor
Barber chair. A. L. Undelaud Barrel II. C. Herr Bean picker. F. C. Britt
Bearing, Autifriction
Bearing, Roller
Beer or ale, TreatingL. Wallerstein Bending machineW. R. and J. E. Blackmau
Binder, Loose leaf
Roiler furnaceW. H. Wilson Roiler superheater, SteamW. Dalton Boiler washing and filling system F. W. Miller
Barber chair. A. L. Undeland Barrel
Book, Stub B. Speed Boot and shoe welt W. B. White Boots and shoes, Ladder climbing attach-
ment for C. Schenck Bottle holder C. Gaffney Bottle, Non-refillable W. R. Voss Bottle, Non-refillable M. Axelrood
Brake
Brake block G. S. McLeod Brake block Refillable J. H. Sheldon
Brick or block and wall construction F. J. Arbogast Brick, tile &c
Brick or block and wait construction F. J. Arbogast Brick, tile &c C. B. Lawten Brush holder, Tooth J. A. McGrath Brushes, Making G. A. Vickery Brucket, Grab O. W. Callahau Encket, Well P. Thomas Button and loop clasp C. W. Stimson Enttendade for wearing appared.
Buttonhole for wearing apparel
Button and loop clasp
chines. C. I. Smith et al. Camera. S. J. West Came juice. Treating. E. W. Deming Came or similar garment. J. Lederer
chines. C. I. Smith et al. Camera. S. J. West Cane juice, Treating. E. W. Deming Cape or similar garment. J. Lederer Car and the like, Cinder. E. C. Sherman Car antifriction side bearing, Railway. Car brake, Automatic. T. S. Hauser Car brake, Railway motor.
Con domilar M. A. Dow
Car, Freight H. W. Kirchner Car, Observation R. M. Rodden Car, Railway G. B. Hippee Car seat F. H. Henry Car wheel lubricator C. F. Gerlinger
Car wheel, Offiess
Carbureter. W. F. Rothe Carbureter. C. F. and A. J. Meyer Carriage, Baby. A. O. Morse Carriage brake. F. W. Wright Cask or barrel, Metallic. I. W. Hoyer Cellar, Waterproof. J. W. Lane
Cask or barrel, Metallic. I. W. Hoyer Cellar, Waterproof. J. W. Lane

'haiu					
	mail	work,	Apparatr	as for i	making
liains	. Ma	chine f	or making	, weldle	ss link
hair	or s	ofa wi	h intercl	nangeab	le scat L. Bezold
halk hand	line elier	holder for gas	Apparate making h interest s or elect	rie ligh	E. Giffin
'heek-	distr	ibutiug	device	C\ \	. Luther Casaretti
lheck Thute,	hook	veying.		J. E	. McDade D. Curtis
. igar 'ireni 'ireni	tip c t bre	aker		$\dots \stackrel{.}{N}_{\Gamma}$.	M. Scott
Hamp Hocks	supj Sur	ort ervisor	l v signalij	P. G. X ng devi	IncGregor
Coaste	ers, (lar for	roller (F. Reissuc	W. Cole
Coatin	g ob	jects v	vith subc	.A. 11. livided	Sharkey material.
ock	box,	Stop		F. F. . T. G.	. Bradley Paradiue
Tolling		enorati i and	ng the t	aste or	l. Winter
for for Collan	sible	box a	od crate.	H. L	. Doherty J. Coghe
olum 'ombi	n or natio	post n lock.		7. J. d. C. Jen	Bowman sen et al.
Compo	sing	machii	ie, Mouoli 	ine (2 .W. E.	pats) Bertram
one-a	ste. I Ispira	teinford	'ing'	.G. S. .d. B.	Callagher Cornwall
and	010	ducing	the sam	e, Tube	for
ondu	it di	stribut	ion, Inter	rior	Erickson
onne ontro	ction. oller.	. Relea	sable	E. S	S. Clough Towson
donve dooke	yor t r. El	able ectric.		\dots \mathbb{L} .	C. Steele Nichols
oolin 'ore i	g de makir	vice ig mac		W. G. V F	Vhittlesey . Herbert
Cottor	n ehe	pbber, a	nd cultiv	ator R R	Krenthans
ottor Couch	i picl . Fo	ter's sa lding	ck	E. I	. Kendall I. Buhler
Coupli Cover,	ing 1 Coc	100k king u	tensil	.J. G.	Lozenski V. Howell
Crane Crape	liolo	Ier		∴.ċ. n	c. Luther Casaretti . McDade D. Curtis A. Baum M. Scott Livermore IneGregor ee for W. Cole) Sharkey material. Bradley Paradiue Winter Apparatus . Doherty J. Coghe Bowman sen et al. pats) . J. Ely Lerickson S. Clough . Towson C. Steele . Nichols Whittlesey . Herbert H. Colley . Kreulhaus . Kendall I. Buhler Lozenski J. Howell W. Pogue . Tierney . Toomey A. Foster A. Foster A. Foster A. Foster A. Foster A. Foster A. Foster A. Foster A. Foster A. Foster A. Waitz W. Arter ice . Wight
Crafe	and	box, F	olding J. S.	Moshol	der et al.
Crean Cre l Coltiv	i ext ockin ator	raetov. g devic		. C. W	Toomey Taylor
C'nltiv C'nlvei	ator ct	arch,	Adjustable	. F. C	. Fortner A. Foster
C'ulvei C'up g	rt st packer	rueture r		C.	A. Foster A. Waitz
Cuivei Curta	nt co in s	Hector tretcher	or trolle; - attachi	y ng dev	W. Arter
Cuspi	lor			J. O. .S. J.	Holmquist Ostrowski G. Voight utomatic.
Damp	er co fer re	ntrollir	ig mechai	nism, A	utomatic. Louser
Darni 	ng. S	Stocking	holder :	for use	in F. Collins
Davit Differ	ontin	i mecha	mism		D. Gilpin
	CILL DI				
Disinf	enta. P Jectiu	g comp	ound and	W. 1 makin	B. Dewees same
Disinf Disinf Disinf	enra. Pr Pectiu Pectiu	g comp	ound and	W. 1 l makin J. .D. N.	D. Gilpin D. Gilpin D. Gewees Same. M. Schutz Hitchcock
1418ри Барага	LV Ca	Trici	thumb t	nobe &	. IIIIINIE
1418ри Барага	LV Ca	Trici	thumb t	nobe &	. IIIIINIE
Displa Displa Displa Displa	iy ca iy ca iy m	rrier ise for echanis ek	tliumb t	neks & Sche	rmemlioru V. Rhode M. Taylor
Displa Displa Displa Displa Displa	iy ca iy ca iy m iy ra iy ra iyer,	se for echanis ek ck	tlinmb t	neks & Sche	rmemhoru V. Rhode M. Taylor W. Lemay J. Smith
Displa Displa Displa Displa Displa	iy ca iy ca iy m iy ra iy ra iyer,	se for echanis ek ck	tlinmb t	neks & Sche	rmemhoru V. Rhode M. Taylor W. Lemay J. Smith
Displa Displa Displa Displa Displa Displa Dividi Door Door Dougl	iy ca iy ca iy ra iy ra iyer, ing e close faste for.	echanis eck ck Rug ngine ener, Sl essing 1	thumb t in iding machines,	acks & Sche	rmemhoru V. Rhode M. Taylor W. Lemay J. Smith B. Truitt E. Adams Hackuey Table hop-
Displa Displa Displa Displa Displa Displa Dividi Door Door Dougl	iy ca iy ca iy ra iy ra iyer, ing e close faste for.	echanis eck ck Rug ngine ener, Sl essing 1	thumb t in iding machines,	acks & Sche	rmemhoru V. Rhode M. Taylor W. Lemay J. Smith B. Truitt E. Adams Hackuey Table hop-
Displa Displa Displa Displa Displa Door Door Dongl per Dongl Draft Draft	iy ca iy ca iy m iy ra iy ra iyer, ing e close faste for, i rai equi gent rigg	echanise ckckRugngine.r.Sissing tertilizertilizerting side sections of the control of the co	thumb t	acks & Sche S. Sche W. W. R. Remov J. W. J. A. G.	rmemhoru V. Rhode M. Taylor W. Lemay J. Smith B. Truitt E. Adams Hackney rable hop- A. Holmes H. White Schenck Marshall
Displa Displa Displa Displa Displa Door Door Dongl per Dongl Draft Draft	iy ca iy ca iy m iy ra iy ra iyer, ing e close faste for, i rai equi gent rigg	echanise ckckRugngine.r.Sissing tertilizertilizerting side sections of the control of the co	thumb t	acks & Sche S. Sche W. W. R. Remov J. W. J. A. G.	rmemhoru V. Rhode M. Taylor W. Lemay J. Smith B. Truitt E. Adams Hackney rable hop- A. Holmes H. White Schenck Marshall
Displa Displa Displa Displa Displa Displa Displa Displa Displa Door Door Dougl per Dougl praft Draft	iy cally cally cally cally rationally rationally rationally calls called for the call call call call call call call cal	echanise for echanise k	thumb t	ncks & Sche S. Sche S. F. W. W. R. Remov. J. & G. allenber Cellar C. A. M. W. J. A. G.	rmemhoru rmemhoru V. Rhode M. Taylor W. Lemay J. Smith B. Truitt E. Adams Hackney able hop- A. Holmes H. White Schenck Marshall ger et al. cLonghlin Prellwitz F. B. Moe A. Larson
Displa Displa Displa Displa Displa Displa Displa Displa Displa Door Door Dougl per Dougl praft Draft	iy cally cally cally cally rationally rationally rationally calls called for a call call call call call call call c	echanise for echanise k	thumb t	ncks & Sche S. Sche S. F. W. W. R. Remov. J. & G. allenber Cellar C. A. M. W. J. A. G.	rmemhoru rmemhoru V. Rhode M. Taylor W. Lemay J. Smith B. Truitt E. Adams Hackney able hop- A. Holmes H. White Schenck Marshall ger et al. cLonghlin Prellwitz F. B. Moe A. Larson
Displa Displa Displa Displa Displa Displa Displa Displa Displa Door Door Dougl per Dougl praft Draft	iy cally cally cally cally rationally rationally rationally calls called for a call call call call call call call c	echanise for echanise k	thumb t	ncks & Sche S. Sche S. F. W. W. R. Remov. J. & G. allenber Cellar C. A. M. W. J. A. G.	rmemhoru rmemhoru V. Rhode M. Taylor W. Lemay J. Smith B. Truitt E. Adams Hackney able hop- A. Holmes H. White Schenck Marshall ger et al. cLonghlin Prellwitz F. B. Moe A. Larson
Displa Displa Displa Displa Displa Displa Displa Displa Displa Door Door Dougl per Dougl praft Draft	iy cally cally cally cally rationally rationally rationally calls called for a call call call call call call call c	echanise for echanise k	thumb t	ncks & Sche S. Sche S. F. W. W. R. Remov. J. & G. allenber Cellar C. A. M. W. J. A. G.	rmemhoru rmemhoru V. Rhode M. Taylor W. Lemay J. Smith B. Truitt E. Adams Hackney able hop- A. Holmes H. White Schenck Marshall ger et al. cLonghlin Prellwitz F. B. Moe A. Larson
Displa Displa Displa Displa Displa Displa Displa Displa Displa Door Door Dougl per Dougl praft Draft	iy cally cally cally cally rationally rationally rationally calls called for a call call call call call call call c	echanise for echanise k	thumb t	ncks & Sche S. Sche S. F. W. W. R. Remov. J. & G. allenber Cellar C. A. M. W. J. A. G.	rmemhoru rmemhoru V. Rhode M. Taylor W. Lemay J. Smith B. Truitt E. Adams Hackney able hop- A. Holmes H. White Schenck Marshall ger et al. cLonghlin Prellwitz F. B. Moe A. Larson
Displa Displa Displa Displa Displa Displa Displa Displa Displa Door Door Dougl per Dougl praft Draft	iy cally cally cally cally rationally rationally rationally calls called for a call call call call call call call c	echanise for echanise k	thumb t	ncks & Sche S. Sche S. F. W. W. R. Remov. J. & G. allenber Cellar C. A. M. W. J. A. G.	rmemhoru rmemhoru V. Rhode M. Taylor W. Lemay J. Smith B. Truitt E. Adams Hackney able hop- A. Holmes H. White Schenck Marshall ger et al. cLonghlin Prellwitz F. B. Moe A. Larson
Displation of the control of the con	ty can the total control of th	echanis ck ck Rug ngine r ser clizer ding sid backw ating formtain formtain for and g device bbing cake irenit	thumb t lm	acks & Sche S. Sche S. F. W. W. R. Remov J. A. G. allenber Cellar V. A. W. W. L. A. G.	rmemhoru V. Rhode M. Taylor W. Lemay J. Smith B. Truitt E. Adams Hackney Table hop- A. Holmes H. White Schenck Marshall Ger et al. Colonghlin Prellwitz J. B. Moe A. Larson Lincon Lincon Lince Lengi et al E. Hegge I. Emrick Rosenberg S. Brown oney et al. W. Leeper
Displation of the control of the con	ty can the total control of th	echanis ck ck Rug ngine r ser clizer ding sid backw ating formtain formtain for and g device bbing cake irenit	thumb t lm	acks & Sche S. Sche S. F. W. W. R. Remov J. A. G. allenber Cellar V. A. W. W. L. A. G.	rmemhoru V. Rhode M. Taylor W. Lemay J. Smith B. Truitt E. Adams Hackney Table hop- A. Holmes H. White Schenck Marshall Ger et al. Colonghlin Prellwitz J. B. Moe A. Larson Lincon Lincon Lince Lengi et al E. Hegge I. Emrick Rosenberg S. Brown oney et al. W. Leeper
Displation of the control of the con	ty can the total control of th	echanis ck ck Rug ngine r ser clizer ding sid backw ating formtain formtain for and g device bbing cake irenit	thumb t lm	acks & Sche S. Sche S. F. W. W. R. Remov J. A. G. allenber Cellar V. A. W. W. L. A. G.	rmemhoru V. Rhode M. Taylor W. Lemay J. Smith B. Truitt E. Adams Hackney Table hop- A. Holmes H. White Schenck Marshall Ger et al. Colonghlin Prellwitz J. B. Moe A. Larson Lincon Lincon Lince Lengi et al E. Hegge I. Emrick Rosenberg S. Brown oney et al. W. Leeper
Displants of the control of the cont	ty cause of the control of the contr	echanis ek ck Ruge r cher Si sssing interest backwe thing ser diger diger diger backwe tomatai lat irou ter and g device ter and bbing hake irenit bontrolle urnace cater achiner	thumb t m	acks & Sche S. Sche S. F. W. W. R. Remov. J	rmemhoru V. Rhode M. Taylor W. Lemay J. Smith B. Truitt E. Adams Hackney Table hop- A. Holmes H. White Schenck Marshall ger et al. CLoughlin Prellwitz B. Moe A. Larson blined Larson blined Larson blined E. Hegge I. Emrick Rosenberg S. Brown ney et al. C. Leper Eastwood Weintraub ies et al. Larson
Displants of the control of the cont	ty cause of the control of the contr	echanis ek ck Ruge r cher Si sssing interest backwe thing ser diger diger diger backwe tomatai lat irou ter and g device ter and bbing hake irenit bontrolle urnace cater achiner	thumb t m	acks & Sche S. Sche S. F. W. W. R. Remov. J	rmemhoru V. Rhode M. Taylor W. Lemay J. Smith B. Truitt E. Adams Hackney Table hop- A. Holmes H. White Schenck Marshall ger et al. CLoughlin Prellwitz B. Moe A. Larson blined Larson blined Larson blined E. Hegge I. Emrick Rosenberg S. Brown ney et al. C. Leper Eastwood Weintraub ies et al. Larson
Displants of the control of the cont	ty cause of the control of the contr	echanis ek ck Ruge r cher Si sssing interest backwe thing ser diger diger diger backwe tomatai lat irou ter and g device ter and bbing hake irenit bontrolle urnace cater achiner	thumb t m	acks & Sche S. Sche S. F. W. W. R. Remov. J	rmemhoru V. Rhode M. Taylor W. Lemay J. Smith B. Truitt E. Adams Hackney Table hop- A. Holmes H. White Schenck Marshall ger et al. CLoughlin Prellwitz B. Moe A. Larson blined Larson blined Larson blined E. Hegge I. Emrick Rosenberg S. Brown ney et al. C. Leper Eastwood Weintraub ies et al. Larson
Displants of the control of the cont	ty cause of the control of the contr	echanis ek ck Rug ngine r ngine r nser ser dizer diug sid backw tomatai lat irou for and for and for and for and controlle formate achines achines citch witch ire sup de mold	thumb t In idding machines, C. S. Shater trap. I holder gas cool asking sa J. Noreaker, r Magneti porter r forms, M	acks & Sche S. Sche S. F. W. W. R. Remov. I	rmemhoru V. Rhode M. Taylor W. Lemay J. Smith B. Truitt E. Adams Hackney Table hop- A. Holmes H. White Schenck Marshall ger et al. CLoughlin Prellwitz B. Moe A. Larson blued J. Deerig uer et al. CLoughlin Prellwitz B. Moe A. Larson blued Larson blued J. Deerig uer et al. E. Hegge I. Emrick Rosenberg S. Brown ney et al. J. Leeper Eastwood Weintraub ies et al. Ls for J. Smoot orse et al. W. Denny Jeremiah Q. Payne for coat Williams
Displants of the control of the cont	ty cause of the control of the contr	echanis ek ck Rug ngine r ngine r nser ser dizer diug sid backw tomatai lat irou for and for and for and for and controlle formate achines achines citch witch ire sup de mold	thumb t In idding machines, C. S. Shater trap. I holder gas cool asking sa J. Noreaker, r Magneti porter r forms, M	acks & Sche S. Sche S. F. W. W. R. Remov. I	rmemhoru V. Rhode M. Taylor W. Lemay J. Smith B. Truitt E. Adams Hackney Table hop- A. Holmes H. White Schenck Marshall ger et al. CLoughlin Prellwitz B. Moe A. Larson blued J. Deerig uer et al. CLoughlin Prellwitz B. Moe A. Larson blued Larson blued J. Deerig uer et al. E. Hegge I. Emrick Rosenberg S. Brown ney et al. J. Leeper Eastwood Weintraub ies et al. Ls for J. Smoot orse et al. W. Denny Jeremiah Q. Payne for coat Williams
Displants of the control of the cont	ly can be seen as a constant of the constant o	echanis ck. ck. Rug. ngine r. ser, dissing ser diser. ding sic backw. ting fantiser paratus and paratus and paratus and paratus and controlle numaee cater achines vitch witch witch ire sup	thumb t In	acks & Sche S. Sche S. Sche W. W. F. Remov J. A. G. Sche A. G. Sche W. J. Sche W. J. Sche A. G. Sche B. W. F. Remov J. A. M. W. J. Sche Cellar M. W. J. Sche P. M. Sche P. M. Sche Parse c shield C. J. M. Sche C. J. M. Sche C. J. M. Sche Cover, S. Sche and A. A. Sche A. J. J. Malac Cover, S. Sche and A. A. Sche A. J. M. Malac A. A. M. Sche A. J. M. M. Sche A. J. M. M. Sche A. J. M.	rmemhoru rmemhoru V. Rhode M. Taylor W. Lemay J. Smith B. Truitt E. Adams Hackuey able hop- A. Holmes H. White Schenck Marshall
Displants of the control of the cont	ly can be seen as a constant of the constant o	echanis ck. ck. Rug. ngine r. ser, dissing ser diser. ding sic backw. ting fantiser paratus and paratus and paratus and paratus and controlle numaee cater achines vitch witch witch ire sup	thumb t iding iding machines, C. S. Sh ater trap. f holder gas cool aking sa J. N breaker, ' r A. Magneti porter forms, M atrolling sliding cool chine	acks & Sche S. Sche S. Sche W. W. F. Remov J. A. G. Sche A. G. Sche W. J. Sche W. J. Sche A. G. Sche B. W. F. Remov J. A. M. W. J. Sche Cellar M. W. J. Sche P. M. Sche P. M. Sche Parse c shield C. J. M. Sche C. J. M. Sche C. J. M. Sche Cover, S. Sche and A. A. Sche A. J. J. Malac Cover, S. Sche and A. A. Sche A. J. M. Malac A. A. M. Sche A. J. M. M. Sche A. J. M. M. Sche A. J. M.	rmemhoru V. Rhode M. Taylor W. Lemay J. Smith B. Truitt E. Adams Hackney Table hop- A. Holmes H. White Schenck Marshall ger et al. CLoughlin Prellwitz B. Moe A. Larson blined Larson blined Larson blined E. Hegge I. Emrick Rosenberg S. Brown ney et al. C. Leper Eastwood Weintraub ies et al. Larson

Engine Cerasing tracing ink &c., Comp	O. E. Osborn
Engine. Erasing tracing ink &c., Comp Evaporating liquids (2 pats). Excavator. M. Explosive engine. C. I. Extensible bracket. Fan. Fan. Fan. Fan. Fan. Fan, Circulating. Farm gate, Self closing. Fastener. W. Faced and litter carrier. C. Feed and litter carrier. C. Feed and litter carrier. C. Feed water regulator. C. Fence post. J. I. Fertilizer distributer. F. an Fertilizer distributer and s. Combined. A. File, Credit account. Fire bucket. Firearm, Repeating. J. II. V. Firearm sight. Fish rod. Flush tank. Flying machine. Flying machine steering appar. Flying machines or marine velor for. Flying machines, Propelling v. Focus finder. Folding box and crate.	C. Ellis
Excavating machine	l. G. Bnnnell . G. Bunnell . U. Hickling
Extensible bracket	A. Dahlen J. Riley
Fan	r. Hanranan .J. Kandera .H. Jalonick
Farm gate, Self closingW.	G. R. Clarke R. Dutemple
Feed and litter carrierC. Feed rollersG.	M. Stevenson D. Trogdan
Feed water regulatorC. Fence anchor, Wire	O. Bergmark .J. Reinhart 3 Skiff et al
Fertilizer distributerF. ar Fertilizer distributerW.	nd R. Bruhn T. McDonald
Combined	seed planter, C. Lindgren I. H. Ringer
Fire bucket	P. Baar Vheeler et al.
Fish rod. Fluid pressure motor	.M. L. Aten A. de Geofroy
Flush tank Flying machine Flying machine steering appar	J. Kelly C. Winston
Flying machines or marine ve	P. Beidlessels, Propel-
Flying machines, Propelling v	ane for .M. Goehler
Focus finder	, G. Dietz
Fruit sizer or grader Frying pan	G. D. Parker J. Reynolds
Furnace Furnace, Delivery mechanism	.F. A. Daley for a billet- .L. R. George
Furniture, Metal	C. A. Linden II. W. Fuller
Game apparatus	.C. H. Moore .B. G. Ward P. Keller
Gas generator, AcetyleneR. Gas igniter	K. Gratigny O. Thielbeule
Gas motorS. Gearingl.	G. Wigelius H. Smelzei
Generator and gas burner, Co	mbined .F. C. Watts
Glass dry cleanser	S. Grimson
manufacture of sewed Goods holding, measuring, an	E. Passler ad computing .C. E. Hedge
Governor Grain drill	K. Dougar L. E. Roby
Grate bar, Force draft hollov	Е. Б. Союу v
For for. Flying machines, Propelling v Focus finder. Folding box and crate. Fruit picker. Fruit sizer or grader. Frying pan. W. Furnace. Furnace, Delivery mechanism heating Furniture, Metal. Fuse lighter. Game apparatus. Game device (2 pats). Gas burner regulator. Gas generator, Acetylene. R. Gas igniter. Gas lighter, Sparking. D. I. Gas motor. S. Gearing. J. Generator and gas burner, Co Glass cutter, Guided. Glass dry cleanser. Gloves, Cutting machine for manufacture of sewed. Goods holding, measuring, an apparatus. Governor. Grain drill. Grate bar. Grate bar. Force draft hollow Grease lubricator (2 pats) Grinding mill. Grinding spirally twisted or Machine for. Gun. Gun. Running-out Guns with recoiling barrels, II; for. Harrow, Disk.	(Reissne) F. Lowry
Grinding millGrinding spirally twisted or	.R. F. Abbo
Gun	T. McGarrity J. H. Brown .K. Haussner
Guns with recoiling barrels, Hy	ydraulie brake E. Olson
Harvester, Straw bindingII. Harvesters, Tandem draft con	A. Hancock
llarvesting machine cutter l	ohnson et al oar '. R. Gourley
Hat pin, Safety	. C. Johnsoi Fehr et al
Hedge trimmer	J. B. Lancoll C. Schlayer \. Henn et al
llinge for doors	.A. L. Adler
HornG.	L. Stevenson J. J. Brassel
Hose couplingJ.	C. E. Pear J. McCarthy F. Robinson
Hub, Differential	. W. Stanley
Identification deviceJ. Implement	H. Thompson
Indicating and adjusting med	hanism .C. M. Gre
Insecticide	T. P. Wilson V. C. Carnel
Instrument, Compound	ine E. Carve
Internal combustion engine. F. X.	Bachle et al
Internal combustion engine Internal combustion engine Intestine cleaning machine	S. G. Wigeliu J. S. Billman
Jack, wheel puller, and vise.	Combined Fitch et al . Op de Hin
JigG Key	H. Elmor J. T. Scanlor
KnifeW. Knockdown caseF. A. aud R.	.F. Lischtial F. Lutz, Jr Bebout et al
Lamp, Candle P. L. F. H	R. II. Welle Chaussinan
Machine for Gun. Running-out Gun. Running-out Guns with recoiling barrels, II; for. Harrow, Disk. Harvester, Straw binding, II Harvesters, Tandem draft con A. L. J. Harvesting machine cutter I. Hat pin, Safety. G. Heddle. W. Hedge trimmer. Heel, Detachable. Hinge. W. Hinge for doors. Hog trough. C. Hoisting drum. Horn. G. Horseshoe pad. Hose coupling. Hub, Differential. G. Hydrocarbon fuel burning at Hub, Differential. G. Hydrocarbon fuel burning at Hub, Differential. G. Hydrocarbon fuel burning at Hub, Differential. G. Hydrocarbon fuel burning at Hub, Differential. G. Hydrocarbon fuel burning at Hub, Differential. G. Hydrocarbon fuel burning at Hub, Differential. G. Hydrocarbon fuel burning at Hub, Differential. G. Hydrocarbon fuel burning at Hub, Differential. G. Hydrocarbon fuel burning at Hub, Differential combustion engine. S. Hinstrument, Compound. Hinsulator pin or bracket mach. Internal combustion engine. F. X. Internal combustion engine. S. Intestine cleaning machine. G. Lack, wheel puller, and vise. F. L. Jar closure. H. Jig. G. Key. Kite. W. Knockdown case. F. A. aud R. Lamp, Candle. P. L. F. H. Lamp, Electric incandescent. W. Lamp socket. E. E. Lasting machine, Shoe. Latch. G. A. Latch, Gate. Lath attaching device. Lath. Lath. G. A. Latch. Holder. Lath. Lath. G. A. Latch. Holder. Lath. Lath. Holder. Lath. L	C. G. Remau N. Matthew
Lamp socketE. E. Lasting machine, Shoe	Taylor et al .J. H. Dezic A. F. Carson
Latch. G. A. Latch, Gate	Klein et al . J. C. Smitl
Lath attaching device	H. Kane E Lindgrei

Level Plumb R E Chase
Level, Trumb
Leather, Treated
used quantities of
LockR. Feola
Locking device for milk-bottles and other objects
Locking mechanism, Automatic
Locomotive, Hot airS. J. Webb
Lubricator E. McCoy Lubricator F. Wiebens
Lubricator for chains, &cA. W. F. Steckel
Malt houses, Apparatus for cooling and
drying air in
Matrix straightening deviceE. J. Hearst
Matting
Measuring and filling machine. F. C. Musso Measuring and price-ealculating machine, Automatic clothR. H. Sheppe Measuring instrument. J. F. Cavanagh et al. Measuring machineE. A. Luster Metal capC. Hammer Metal forming applianceW. M. Scholl Metal sheets, Apparatus for eatching, conveying, and cooling eoated. L. C. Steele Meter motorA. R. Holmen Milk canJ. Peshek Milk eanJ. Peshek Milk eanP. Larsen et al. Milking machineA. H. Loqvist Minerals, Breaking down appliance for W. Williams Mining machineW. Williams Mining machineE. Penberthy
Measuring instrument. J. F. Cavanagh et al.
Metal cap
Metal forming applianceW. M. Scholl
veying, and cooling eoated. L. C. Steele
Milk can
Milk ean
Minerals, Breaking down appliance for
Mining machine Penberthy Mining machine
Mining machine
I. V. Maclean
Mowers, Grass collector for lawh
Muffler, Rotary powerG. Lewis
Nut lock
Oil-burnerV. II. and J. H. T. Mills
Ordnance Firing gear of breech loading.
A. T. Dawson et al.
Music leaf turner
Orthonitrobenzaldehyde, J. Koetschet et al.
Oversuit, Workman'sR. S. Hall
Packing, Car axle journal box. C. C. Howe
Packing for self balancing purposes
Ozonizer
Paper bag machineH. Smithwick
Paper boxes, Machine for attaching fly
Paper roll clip attachment
Paper, Wall (Reissue)R. B. Griffin
Pattern rack
Pattern rack. H. Simons Pavement breaking machine. E. Rynearson Pavements, Apparatus for building illuminating. S. Zacharias Pebble phosphate, &c., Washer for. T. Roberts Pencil sharpener. H. Rolle Pencils, Treating wood for S. H. Crocker Percolator. J. J. O'mara Phonograph cahinet. C. A. Cooper Phonographic plate. H. Doyle Photographic shutter. G. Dietz Photographic shutter. A. Wollensak Piano playing attachment, Folding treadle
Pan cleaning and greasing machine G. W. Walk Paper bag machine
Pattern rack. H. Simons Pavement breaking machine. E. Rynearson Pavements, Apparatus for building illuminating. S. Zacharias Pebble phosphate, &c., Washer for T. Roberts Pencil sharpener. H. Rolle Pencils, Treating wood for S. H. Crocker Percolator. J. J. O'mara Phonograph cahinet. C. A. Cooper Phonographic plate. H. Doyle Photographic shutter. G. Dietz Photographic shutter. A. Wollensak Piano playing attachment, Folding treadle for. E. T. Turney Pin protector. W. C. Stuckel Pipe and fitting. J. F. Muller
Pattern rack
Pattern rack
Pattern rack
Pattern rack. H. Simons Pavement breaking machine. E. Rynearson Pavements, Apparatus for building illuminating. S. Zacharias Pebble phosphate, &c., Washer for. T. Roberts Pencil sharpener. H. Rolle Pencils, Treating wood for S. H. Crocker Percolator. J. J. O'mara Phonograph cahinet. C. A. Cooper Phonographic plate. H. Doyle Photographic shutter. A. Wollensak Piano playing attachment, Folding treadle for. E. T. Turney Pin protector. W. C. Stuckel Pipe and fitting. J. F. Muller Pipe coupling. J. E. Ward Pipe making machine. G. L. Chatfield Pipes stem and mouthpiece. G. Osten Pipes, Device for tapping and controlling the flow of liquids in. C. W. Metcalf Pipes, Kcy for regulating sluices &c., affixed to water. T. Brammanshaw
Pattern rack. H. Simons Pavement breaking machine. E. Rynearson Pavements, Apparatus for building illuminating. S. Zacharias Pebble phosphate, &c., Washer for T. Roberts Pencil sharpener. H. Rolle Pencils, Treating wood for S. H. Crocker Percolator. J. J. O'mara Phonograph cahinet. C. A. Cooper Phonographic plate. H. Doyle Photographic shutter. G. Dietz Photographic shutter. A. Wollensak Piano playing attachment, Folding treadle for. E. T. Turney Pin protector. W. C. Stuckel Pipe and fitting. J. F. Muller Pipe coupling. J. E. Ward Pipe making machine. G. L. Chatfield Pipes tem and mouthpiece. G. Osten Pipes, Device for tapping and controlling the flow of liquids in C. W. Metcalf Pipes, Kcy for regulating sluices &c., af- fixed to water. T. Bramanshaw Pitman, Ball bearing. P. Diehl et al. Planter, Potato. A. T. Heikes
Pattern rack
Pattern rack
Pattern rack. H. Simons Pavement breaking machine. E. Rynearson Pavements, Apparatus for building illuminating. S. Zacharias Pebble phosphate, &c., Washer for. T. Roberts Pencil sharpener. H. Rolle Pencils, Treating wood for S. H. Crocker Percolator. J. J. O'mara Phonograph cahinet. C. A. Cooper Phonographic plate. H. Doyle Photographic shutter. G. Dietz Photographic shutter. A. Wollensak Piano playing attachment, Folding treadle for. E. T. Turney Pin protector. W. C. Stuckel Pipe and fitting. J. F. Muller Pipe coupling. J. E. Ward Pipe making machine. G. L. Chatfield Pipes stem and mouthpiece. G. Osten Pipes, Device for tapping and controlling the flow of liquids in. C. W. Metcalf Pipes, Kcy for regulating sluices &c. af- fixed to water. T. Bramanshaw Pitman, Ball bearing. P. Diehl et al. Planter, Potato. A. T. Heikes Planters, Hinged fork for check row. A. T. Carlson Plastic material, Apparatus for molding.
Pattern rack. H. Simons Pavement breaking machine.
Pattern rack
Pattern rack
Pin protector
Pin protector. W. C. Stuckel Pipe and fitting. J. F. Muller Pipe coupling. J. E. Ward Pipe making machine. G. L. Chatfield Pipe stem and mouthpiece. G. Osten Pipes, Device for tapping and controlling the flow of liquids in. C. W. Metcalf Pipes, Kcy for regulating sluices &c., af- fixed to water. T. Bramanshaw Pitman, Ball bearing. P. Diehl et al. Planter, Potato. A. T. Helkes Planter, Seed. A. C. Lindgren Planters, Hinged fork for check row. A. T. Carlson Plastic material, Apparatus for molding. A. G. Brust Plow frame, Gang. J. H. Algard, et al. Portable closet, Folding. P. Cofrode Post card rack. W. C. Kalser et al. Post driving machine. C. A. Gabriel Potash salts and other products from sili- cious rocks, Extracting. E. Hart Power transmitting mechanism. C. A. Rich Pressure control apparatus, Duplex W. V. Turner Printer's alining and measuring tablc T. J. Sayles Projectile (2 pats) J. H. Brown Projeetile for attacking face-hardened ar- mor C. Davis Projection screen O. Buechner Propeller whcel . J. P. Holmes Prospecting drill II. R. Ameling Pump barrel
Pin protector. W. C. Stuckel Pipe and fitting. J. F. Muller Pipe coupling. J. E. Ward Pipe making machine. G. L. Chatfield Pipe stem and mouthpiece. G. Osten Pipes, Device for tapping and controlling the flow of liquids in C. W. Metcalf Pipes, Kcy for regulating sluices &c., af- fixed to water. T. Bramanshaw Pitman, Ball bearing. P. Diehl et al. Planter, Potato. A. T. Heikes Planter, Seed. A. C. Lindgren Planters, Hinged fork for check row A. T. Carlson Plastic material, Apparatus for molding. Plow frame, Gang. J. H. Algard. et al. Portable closet, Folding. P. Cofrode Post card rack. W. C. Kalser et al. Post driving machine. C. A. Gabriel Potash salts and other products from sili- cious rocks, Extracting. E. Hart Power tradsmitting mechanism. C. A. Rich Pressure control apparatus, Duplex T. J. Sayles Projectile (2 pats) J. H. Brown Projectile for attacking face-hardened ar- mor. C. Davis Projection screen. O. Buechner Propeller C. A. Swenson Propeller wheel J. P. Holmes Prospecting drill II. R. Ameling Pump barrel C. Williams Pump for portable vacuum cleaners L. C. Allen Pump mechanism, Combined water and air. Pump walve mechanism, Stcam E. M. Fulton Radiator sections Making one-piece (2 pats)
Pin protector. W. C. Stuckel Pipe and fitting. J. F. Muller Pipe coupling. J. E. Ward Pipe making machine. G. L. Chatfield Pipe stem and mouthpiece. G. Osten Pipes, Device for tapping and controlling the flow of liquids in C. W. Metcalf Pipes, Kcy for regulating sluices &c., af- fixed to water. T. Bramanshaw Pitman, Ball bearing. P. Diehl et al. Planter, Potato. A. T. Heikes Planter, Seed. A. C. Lindgren Planters, Hinged fork for check row A. T. Carlson Plastic material, Apparatus for molding. Plow frame, Gang. J. H. Algard. et al. Portable closet, Folding. P. Cofrode Post card rack. W. C. Kalser et al. Post driving machine. C. A. Gabriel Potash salts and other products from sili- cious rocks, Extracting. E. Hart Power tradsmitting mechanism. C. A. Rich Pressure control apparatus, Duplex T. J. Sayles Projectile (2 pats) J. H. Brown Projectile for attacking face-hardened ar- mor. C. Davis Projection screen. O. Buechner Propeller C. A. Swenson Propeller wheel J. P. Holmes Prospecting drill II. R. Ameling Pump barrel C. Williams Pump for portable vacuum cleaners L. C. Allen Pump mechanism, Combined water and air. Pump walve mechanism, Stcam E. M. Fulton Radiator sections Making one-piece (2 pats)
Pin protector. W. C. Stuckel Pipe and fitting. J. F. Muller Pipe coupling. J. E. Ward Pipe making machine. G. L. Chatfield Pipe stem and mouthpiece. G. Osten Pipes, Device for tapping and controlling the flow of liquids in C. W. Metcalf Pipes, Kcy for regulating sluices &c., af- fixed to water. T. Bramanshaw Pitman, Ball bearing. P. Diehl et al. Planter, Potato. A. T. Heikes Planter, Seed. A. C. Lindgren Planters, Hinged fork for check row A. T. Carlson Plastic material, Apparatus for molding. Plow frame, Gang. J. H. Algard, et al. Portable closet, Folding. P. Cofrode Post card rack. W. C. Kalser et al. Post driving machine. C. A. Gabriel Potash salts and other products from sili- cious rocks, Extracting. E. Hart Power tradsmitting mechanism. C. A. Rich Pressure control apparatus, Duplex T. J. Sayles Projectile (2 pats) J. H. Brown Projectile for attacking face-hardened ar- mor. C. Davis Projection screen. O. Buechner Propeller C. A. Swenson Propeller whcel J. P. Holmes Prospecting drill II. R. Ameling Pump barrel C. Williams Pump for portable vacuum cleaners L. C. Allen Pump mechanism, Combined water and air. L. C. Allen Pump valve mechanism, Stcam G. B. Gates Pumping head S. M. Fulton Radiator sections, Making one-piece (2 pats) F. A. Feldkamp Rail brace J. I. Jonas
Pin protector. W. C. Stuckel Pipe and fitting. J. F. Muller Pipe coupling. J. E. Ward Pipe making machine. G. L. Chatfield Pipe stem and mouthpiece. G. Osten Pipes, Device for tapping and controlling the flow of liquids in C. W. Metcalf Pipes, Kcy for regulating sluices &c., af- fixed to water. T. Bramanshaw Pitman, Ball bearing. P. Diehl et al. Planter, Potato. A. T. Heikes Planter, Seed. A. C. Lindgren Planters, Hinged fork for check row A. T. Carlson Plastic material, Apparatus for molding. Plow frame, Gang. J. H. Algard, et al. Portable closet, Folding. P. Cofrode Post card rack. W. C. Kalser et al. Post driving machine. C. A. Gabriel Potash salts and other products from sili- cious rocks, Extracting. E. Hart Power tradsmitting mechanism. C. A. Rich Pressure control apparatus, Duplex T. J. Sayles Projectile (2 pats) J. H. Brown Projectile for attacking face-hardened ar- mor. C. Davis Projection screen. O. Buechner Propeller C. A. Swenson Propeller whcel J. P. Holmes Prospecting drill II. R. Ameling Pump barrel C. Williams Pump for portable vacuum cleaners L. C. Allen Pump mechanism, Combined water and air. L. C. Allen Pump valve mechanism, Stcam G. B. Gates Pumping head S. M. Fulton Radiator sections, Making one-piece (2 pats) F. A. Feldkamp Rail brace J. I. Jonas
Pin protector. W. C. Stuckel Pipe and fitting. J. F. Muller Pipe coupling. J. E. Ward Pipe making machine. G. L. Chatfield Pipe stem and mouthpiece. G. Osten Pipes, Device for tapping and controlling the flow of liquids in C. W. Metcalf Pipes, Kcy for regulating sluices &c., af- fixed to water. T. Bramanshaw Pitman, Ball bearing. P. Diehl et al. Planter, Potato. A. T. Heikes Planter, Seed. A. C. Lindgren Planters, Hinged fork for check row A. T. Carlson Plastic material, Apparatus for molding. Plow frame, Gang. J. H. Algard, et al. Portable closet, Folding. P. Cofrode Post card rack. W. C. Kalser et al. Post driving machine. C. A. Gabriel Potash salts and other products from sili- cious rocks, Extracting. E. Hart Power tradsmitting mechanism. C. A. Rich Pressure control apparatus, Duplex T. J. Sayles Projectile (2 pats) J. H. Brown Projectile for attacking face-hardened ar- mor. C. Davis Projection screen. O. Buechner Propeller C. A. Swenson Propeller whcel J. P. Holmes Prospecting drill II. R. Ameling Pump barrel C. Williams Pump for portable vacuum cleaners L. C. Allen Pump mechanism, Combined water and air. L. C. Allen Pump valve mechanism, Stcam G. B. Gates Pumping head S. M. Fulton Radiator sections, Making one-piece (2 pats) F. A. Feldkamp Rail brace J. I. Jonas
Pin protector. W. C. Stuckel Pipe and fitting. J. F. Muller Pipe coupling. J. E. Ward Pipe making machine. G. L. Chatfield Pipe stem and mouthpiece. G. Osten Pipes, Device for tapping and controlling the flow of liquids in C. W. Metcalf Pipes, Kcy for regulating sluices &c., af- fixed to water. T. Bramanshaw Pitman, Ball bearing. P. Diehl et al. Planter, Potato. A. T. Heikes Planter, Seed. A. C. Lindgren Planters, Hinged fork for check row A. T. Carlson Plastic material, Apparatus for molding. Plow frame, Gang. J. H. Algard. et al. Portable closet, Folding. P. Cofrode Post card rack. W. C. Kalser et al. Post driving machine. C. A. Gabriel Potash salts and other products from sili- cious rocks, Extracting. E. Hart Power tradsmitting mechanism. C. A. Rich Pressure control apparatus, Duplex T. J. Sayles Projectile (2 pats) J. H. Brown Projectile for attacking face-hardened ar- mor. C. Davis Projection screen. O. Buechner Propeller C. A. Swenson Propeller wheel J. P. Holmes Prospecting drill II. R. Ameling Pump barrel C. Williams Pump for portable vacuum cleaners L. C. Allen Pump mechanism, Combined water and air. Pump walve mechanism, Stcam E. M. Fulton Radiator sections Making one-piece (2 pats)

Railway spike forming machine J. H. Alexander et al. Railway switch operating mechanism, Elec-
Railway switch operating mechanism, Electric. H. I. Blattle Railway tie. W. V. La Bau Railway tie, Metallic. O. W. Beach Railway track switch. J. B. O'Donnell Razor. W. H. Smith Razor stropping machine. F. Mitchell Receiving apparatus. H. Shoemaker Receptacle and support therefor. J. W. Atlee Receptacles, Making. C. B. Stilwell Record receiving elements, Means for holding. C. E. Tomlinson Reducing agents, Manufacture of
Railway tie, MetallicO. W. Beach Railway track switchJ. B. O'Donnell Razor
Razor stropping machineF. Mitchell Receiving apparatus
Receptacle and support therefor
Record receiving elements, Means for hold- iug
Refractory materials, Apparatus for the treatment of the
Refractory materials, Treatment of (3 pats) E. Weintrauh
Reducing agents, Manufacture of
Ribbon feeding mechanism (4 pats)
Rock crusher A. W. Jones Rock drill W. Wood
Rolling mill F. I. Ellis Rope socket W. A. Campbell Rotary engine J. S. Beeson
Rock drill. W. Wood Rolling mill. F. I. Ellis Rope socket. W. A. Campbell Rotary engine. J. S. Beeson Rotary internal combustion engine. J. Jacobsen Rotary kiln. J. S. Fasting Rubbing materials, Holder for pliant C. N. Nelk Running gear. V. Martin Safe. S. W. Fish Safe and vault door, Compound. S. W. Fish Safe of vault (5 pats). S. W. Fish Safe or vault body. S. W. Fish Safe or vault door, Compound (3 pats). S. W. Fish Safe or vault door, Compound (3 pats). S. W. Fish
Rubbing materials, Holder for pliant C. N. Nelk
Safe and vault door, Compound S. W. Fish
Safe or vault (5 pats)S. W. Fish Safe or vault door (9 pats)S. W. Fish
Safe or vault door, Compound (3 pats)
Safe or vault door holding meaus (2 pats) Saft or vault door holding or locking means. Saft or vault door holding or locking means. Safe or vault locking mechanism (2 pats)
meansS. W. Fish Safe or vault locking mechanism (2 pats) Salt and other substances Malting and nu-
Safe or vault locking mechanism (2 pars) S. W. Fish Salt and other substances, Melting and purifying
Sand drier, RotaryS. J. Bingham
Sash lifting appliance for vertically mova- ble and swinging windows. B. Hausmann
Sash lock
Saw guideG. A. Daly Saw mortiser attachment, Chain. V. Varin Saw-set works. Power operated. J. McLaren
Saws, Safety device for O. Troupenat Sawing guide V. A. McWorld Sawmill hogs Attachment for F. E. Martin
Scale, Weighing V. E. Edwards Screw stock and tap wrench. E. J. Fugere
Sash lifting appliance for vertically movable and swinging windows. B. Hausmann Sash lock. W. B. Weaver Sash, Window. R. W. Ivey Saw filing machine. C. F. Hobson Saw guide. G. A. Daly Saw mortiser attachment, Chain. V. Varin Saw-set works, Power operated. J. McLaren Saws, Safety device for O. Troupenat Sawing guide. V. A. McWorld Sawmill hogs, Attachment for F. E. Martin Scale, Weighing. V. E. Edwards Screw stock and tap wrench. E. J. Fugere Sealing machine, Package. F. M. Peters et al. Searchlight bracket, Automatic swivel. Searchlight bracket, Automatic swivel. Seed and fertilizer distributer. T. J. King Sewing machine stands, Clamping mechanism for dropleaf. C. E. Colegrove Sharpening device, Lawn mower knife. L. Hayne Shell Loaded shot. N. P. Leach
Seed and fertilizer distributerT. J. King Sewing machine stands, Clamping mechan-
Sharpening device, Lawn mower knife
Shell, Loaded shotN. P. Leach Shingle-pressE. B. Crowley et al.
Shock absorber
Shoc, SportingC. L. Drake Shoe ventilating attachmentW. J. Duncan Signal
Signaling apparatus. H. Shoemaker Signaling apparatus C. P. Nachod
Sled propeller . A. Francescatti Smoothing device . A. Hofheimer
Snap switch, Rotary S. Kori Snap switch, Rotary S. Korf et al. Soap container G. M. Irwin
Socket shell lock
Sole pressing machine
Solutions, Process and apparatus for puri- fying. F. Tiemann Spark arrester. W. T. Denue
Speculum T R Humphyeys
Sharpening device. H. E. Smith Sharpening device, Lawn mower knife.
Speed varying and reversing mechanism. L. and L. R. Bleitz Spinning, doubling and like operations, Apparatus for. S. Z. de Ferranti Spool stand. P. Brunelle et al. Spring (3 pats). A. L. Snow Spring wheel and tire. G. L. Hays Squirrel exterminator. J. M. Bourn Stacker, Pneumatic. W. F. McGregor Stacker, Pneumatic. F. L. Sattley Stamp, Hand receipt. M. Reintanz et al. Stay. J. Dupuette
Spring (3 pats) . A. L. Snow Spring wheel and tire G. L. IIays
Stacker, Pneumatic. W. F. McGregor Stacker, Pneumatic. F. L. Sattley
Stamp, Hand receiptM. Reintanz et al. StayJ. Duquettc Steam distributing system, Underground
Steam engiue G. G. A. Lindholm Steam trap A Werts
Stamp, Hand receipt. M. Reintanz et al. Stay. J. Duquette Steam distributing system, Underground. E. L. Barnes Steam engiue. G. G. A. Lindholm Steam trap. A Werts Steel castings, Hardening the face of J. W. Gebhard Steering gear. F. H. Joues Steering cutting machine. G. Rempshider
Stencil cutting machineG. Remnsnider Stencil machine rotary feedG. Remnsnider Stereoscopic apparatusH. C. Snook et al. Stereotype plates, Machine for cooling
Stereotype plates, Machine for cooling E. G. Burkam et al. Stone shaping machineE. Eggers
otone snaprag macmineE. Eggers

StoveS. G. Staron et al. Stove, CharcoalJ. Rademacher Stove doorA. M. Gummer
Stove, Charcoal. J. Rademacher Stove door. A. M. Gummer Stove pipe cleaner and damper
Stump puller and stump piler, Combined SuperheaterJ. Mitchell
Sweep attachment
Table or like stand for advertising purposes and for displaying and storing articles and goods
ticles and goods
Telegraph code system S. M. Wilson Telegraphic recording apparatus
Telegraphy, Transmitting apparatus for wirelessG. Marconi Telephone exchanges, Connecting circuit
Tclegraph code system S. M. Wilson Telegraphic recording apparatus
treatingJ. C. Hebden et al. Thermo electric circuit breaker E. W. Leeper
Threshing machine attachment. L. M. Thomsou Ticket Car. O. Asselin Tie plate S. Friedman
Tie plate. H. Edwards Time recorder. E. E. Yaxley Timer. G. T. Browu
Tire armor A. M. Bruce Tire construction C. N. Harrison Tirc cover, Pneumatic A. J. Michelin
Tire, Pneumatic
Tires, Vulcanizing device for rubber
Tobacco box
Tool, Combination test. F. Hermann et al. Tooth cusp, Artificial T. Steele Torches, Burner for self vaporizing
Torpedoes discharged from submarine boats, Compensating for L. Y. Spear Toy E. M. Myers
Toy
Track Druns
Tramways and the like, Point controlling mechanism forJ. J. Thomas Tramways, Tightening and supporting
Tramways and the like, Point controlling mechanism forJ. J. Thomas Tramways, Tightening and supporting means for wire ropeII. A. Weicher Transplanting machineA. Larose TrapJ. C. McAtee Traveling shearsJ. T. McGrath
Transways and the like, Point controlling mechanism for J. J. Thomas Tramways, Tightening and supporting means for wire rope II. A. Weicher Transplanting machine A. Larose Trap J. C. McAtee Traveling shears J. T. McGrath Tricycle D. Crocket Trolley E. Y. Moore Trolley, Electric railway J. H. Mountain Trolley wheel Electric W. H. Bean
Tramways and the like, Point controlling mechanism for J. J. Thomas Tramways, Tightening and supporting means for wire rope II. A. Weicher Transplanting machine A. Larose Trap J. C. McAtee Traveling shears J. T. McGrath Tricycle D. Crocket Trolley E. Y. Moore Trolley, Electric railway J. H. Mountain Trolley wheel, Electric W. H. Bean Truck, Car S. S. Knight Tube cleaner S. S. Poole Tubes, Apparatus for making square metal
Tire armor. A. M. Bruce Tire construction. C. N. Harrison Tirc cover, Pneumatic. A. J. Michelin Tirc, Pneumatic. F. A. Macon Tire, Pneumatic. T. Dunn Tire protector, Pneumatic. E. T. Clark Tire, Spring. J. P. Kopetka Tires, Vulcanizing device for rubber W. C. and M. W. Rishridger Tobacco and like packing machine H. M. Smitt Tobacco cutting machine. A. H. Anstey Tobacco pipe. J. Allen Tool, Comhination test. F. Hermann et al, Tooth cusp, Artificial. T. Steele Torches, Burner for self vaporizing. J. R. Donnelly Torpedoes discharged from submarine boats, Compensating for L. Y. Spear Toy E. M. Myers Toy E. M. Myers Toy W. Greeu Toy W. Greeu Toy W. Greeu Toy J. Thomas Tramways and the like, Point controlling mechanism for J. J. Thomas Tramways, Tightening and supporting means for wire rope. If A. Weicher Transplanting machine. A. Larose Trap J. C. McAtee Traveling shears J. T. McGrath Tricycle. D. Crocket Trolley. Electric railway J. H. Mountain Trolley Selectric railway J. H. Mountain Trolley, Electric railway J. H. Mountain Trolley, Electr
Tramways and the like, Point controlling mechanism forJ. J. Thomas Tramways, Tightening and supporting means for wire ropeII. A. Weicher Transplanting machineA. Larose TrapJ. C. McAtee Traveling shearsJ. T. McGrath TricycleD. Crocket TrolleyE. Y. Moore Trolley, Electric railway. J. H. Mountain Trolley wheel, ElectricW. H. Bean Truck, CarS. S. Knight Tube cleanerS. S. Poole Tubes, Apparatus for making square metal P. H. Seery Tubing, Plate metalP. H. Seery Turbines, Gearing forJ. Blaeker Turbines, Gearing forL. A. Parsons Turbines, Labyrinth packing forF. Ljungstrom TypeD. C. Hughes TypewriterW. P. Kidder
Tramways and the like, Point controlling mechanism for
Turbines, Gearing for C. A. Parsons Turbines, Labyrinth packing for F. Ljungstrom Type D. C. Hughes Typewriter W. P. Kidder Typewriter G. W. Donning Typewriter, line lock G. W. Davis Typewriter tabulating attachment H. Harvis et al. Typewriter machine J. D. Daugherty Typewriting machine G. B. Webb
Turbines, Gearing for C. A. Parsons Turbines, Labyrinth packing for F. Ljungstrom Type D. C. Hughes Typewriter W. P. Kidder Typewriter G. W. Donning Typewriter, line lock G. W. Davis Typewriter tabulating attachment H. Harvis et al. Typewriter machine J. D. Daugherty Typewriting machine G. B. Webb
Turbines, Gearing for C. A. Parsons Turbines, Labyrinth packing for F. Ljungstrom Type D. C. Hughes Typewriter W. P. Kidder Typewriter G. W. Donning Typewriter, line lock G. W. Davis Typewriter tabulating attachment H. Harvis et al. Typewriter machine J. D. Daugherty Typewriting machine G. B. Webb
Turbines, Gearing for C. A. Parsons Turbines, Labyrinth packing for F. Ljungstrom Type D. C. Hughes Typewriter W. P. Kidder Typewriter G. W. Donning Typewriter, line lock G. W. Davis Typewriter tabulating attachment H. Harvis et al. Typewriter machine J. D. Daugherty Typewriting machine G. B. Webb
Turbines, Gearing for C. A. Parsons Turbines, Labyrinth packing for F. Ljungstrom Type D. C. Hughes Typewriter W. P. Kidder Typewriter G. W. Donning Typewriter, line lock G. W. Davis Typewriter tabulating attachment H. Harvis et al. Typewriter machine J. D. Daugherty Typewriting machine G. B. Webb
Turbines, Gearing for C. A. Parsons Turbines, Labyrinth packing for F. Ljungstrom Type D. C. Hughes Typewriter W. P. Kidder Typewriter G. W. Donning Typewriter, line lock G. W. Davis Typewriter tabulating attachment H. Harvis et al. Typewriter machine J. D. Daugherty Typewriting machine G. B. Webb
Turbines, Gearing for C. A. Parsons Turbines, Labyrinth packing for F. Ljungstrom Type D. C. Hughes Typewriter W. P. Kidder Typewriter G. W. Donning Typewriter, line lock G. W. Davis Typewriter tabulating attachment H. Harvis et al. Typewriter machine J. D. Daugherty Typewriting machine G. B. Webb
Turbines, Gearing for C. A. Parsons Turbines, Labyrinth packing for F. Ljungstrom Type D. C. Hughes Typewriter W. P. Kidder Typewriter G. W. Donning Typewriter, line lock G. W. Davis Typewriter tabulating attachment H. Harvis et al. Typewriter machine J. D. Daugherty Typewriting machine G. B. Webb
Turbines, Gearing for . C. A. Parsons Turbines, Labyrinth packing for
Turbines, Gearing for C. A. Parsons Turbines, Labyrinth packing for
Turbines, Gearing for . C. A. Parsons Turbines, Labyrinth packing for

Issued July 18, 1911.

MECHANICAL PATENTS.

MECHANICAL FATENTS.
Adjustable ventilator
Aerodart, Implement for projecting an C. R. Bannihr
Aeroplane M. B. Saavedra Air-brake cmergency appliance C. Hill
Air craftC. J. Lake AirshipP. Lehmann
Alarm apparatus, Automatic high temperatureJ. V. Lundstrom et al.
Anchor
hair, Treatment of L. Meunier Animal trap W. T. Galligher
AnnunciatorI. J. Bradshaw Arch support adjusterJ. W. Arrowsmith
Arch supporter
Autographic registerS. R. Shoup
Automatic alarmA. C. Farley et al. Automatic fenderG. L. Wheeler
Automobile attachmentJ. A. Wilkinson Automobile driving mechanism
Axle structure for motor vehicles, Driving
Bag holder. E. B. Heyd
Ball retainerF. H. Farmer Barometers, Indicator for showing the time
of adjustment of F. H. Bush Barrel making machine J. F. East
Bearing, BallO. C. Knipe Bed, ExtensionA. C. Keightley et al.
Binder, Loose leafC. F. McBee Block and brick mold. Plastic
Blue print machineC. F. Pease
Boat detaching appliance. H. E. Rottmer
Boat, Submarine. S. C. Rockman Bohbin carrier G. Neufeld
Adjustable ventilator F. J. and J. R. Baldwin Aerodart, Implement for projecting an C. R. Bannihr Aeroplane
Book, Perpetual inventory
Books, Binding forC. R. Duryea et al. BookbindingP. J. Renninger
Bottle closure and supporting device L. W. Aschmeier Bottle filling machine A. Schneider
Book, Loose lear
Box
Bracelet, Expansible flexible. E. G. Harrop
Brake operating device, Emergency. A. Huntley Braking apparatus, Vehiele. L. Boirault Brick molding machine. C. J. and F. Helm Bridge. W. H. Jones Bridge score sheet, Pivot. A. N. Gardiner Bromids, Manufacturing. H. H. Dow Broom-bridle. E. F. Meyer Broom corn knife. P. Stewart Broom corn knife. E. A. Peterson Brush. G. F. Greeu et al. Brush, Wire. F. Martin Buckle. S. Katz Building. T. A. Eisen Building block coustruction, Cement or concrete. M. Goehler
Brick molding machine. C. J. and F. Helm Bridge
Bridge score sheet, PivotA. N. Gardiner Bromids, ManufacturingH. H. Dow Broom-bridge E. F. Meyer
Broom corn knife. P. Stewart Broom corn knife. E. A. Peterson
Brush, Wire F. Martin
Building T. A. Eisen Building block construction, Cement or con-
crete
Buruer
crete
Calculating device
mechanism for
Cabinet. J. Messersmith Cabinet, Revolving L. II. Cobb Calculating device C. J. Smith Calculating machines, Reversible transfer mcchanism for . C. Wolter Cau cover, Milk R. Bray Can receptacle, Coudensed milk
Cane mill rollerJ. K. Marcks

Cans, Mannfacturing laequered or protec-	Eı
Cans, Mannfacturing lacquered or protective coatedJ. G. Hodgson Canopy for draft-animals. Adjustable	Ei Ei
Car	Ei Ei
Car door, GrainE. J. Russell et al. Car door hangerT. Mull	E.
Car Dnmp	E:
Car door, Grain. E. J. Russell et al. Car door, Grain. E. J. Russell et al. Car door hanger . T. Mull Car, Dnmp F. S. Ingoldsby Car Dnmp T. Walker Car dnmping mechanism . J. M. Coleman Car dumping mechanism . N. S. Reeder Car fender . J. A. Anderson et al.	E:
Car Grain I M Coleman	E: F:
Car heater. J. P. Elmer Car, Motor. W. S. Hovey et al. Car, Muriatic acid tank. O. Proelss et al. Car, Pay-on-the-platform. N. Benincasa Car, Ponltry. W. M. Ryan	F
Car, Muriatic acid tankO. Proelss et al. Car, Pay-on-the-platformN. Benincasa	F F F
Car, Ponltry	F
Car safety attachmentR. S. Mills Car wheel flange InbricatorJ. E. Fecney	F
Cars Load retaining attachment for log-	F
ging	F
Carbureter. A. J. Scaife Carbureter. H. Bingham Carbnreter for internal combustion engines.	F
	F F:
Carding engines, Apparatus for attaching filleting to the flat bars of . J. Dronsfield	F:
- Carding machines Clutch for teeding mech-	F
anism for J. B. Howe Casket, Burial W. E. Swartz Caster R. P. Heron Cement for furnace slag, Manufacture of	F
	F
Cement post machine. P. E. Smith Chaiu link. H. E. Hayward Chandelier. S. G. Camp	F
Check protector C. E. Holland	F
Check, Self-protectingA. J. Farmer ChurnC. A. McCann	F F
Circuit breakerA. L. Horton	F
Clamping device	F/2
Climbing and scaling device. E. J. Rimmer Closet seat	F F
Clothes line support	F
Clutch, Fluid operated safety	F
Coal washing apparatus. J. A. Montgomery Cocal washing apparatus. J. A. Montgomery Coca powder, Producing. F. E. F. Neumann Coke quenching machine. J. W. Scaver et al. Coking furnace (Reissue). L. L. Summers Combreand attention theoretics	F
Cocoa powder, ProducingF. E. F. Neumann	F
Coke quenching machine. J. W. Scaver et al. Coking furnace (Reissue)L. L. Summers	F
Comber and stop motion therefor	F F F
Commutator for dynamo electric machines	F
Conveyor and mixerJ. A. Thomas	F
Cooker, Steam G. J. Hutchings Corn sheller P. C. Southwick	F
Crane Postable iib W S Crain	F
Comber and stop motion therefor	F
Cream separators Gearing for	Ĝ: G:
Cream separators, Gearing for	(† (†
Curtain hanging deviceI. Kwiatkowski	G: G:
Cutting tool, Electromagnetic, L. T. Bonsall Cycle stand, Motor,, S. T. Weber	G G
Cycles, bicycles &c., Back rest for motor W. Doering	G:
Cycles, Power transmission mechanism for motorV. I. Moncrieff	G
motor. V. I. Monerieff Decorticating machine. M. Prieto Deflectometer. W. Fentzloff	G.
Desk rack	G
Direct acting engineG. L. Badger	G. G
Display card, Collar-stayJ. M. Kaiser Display rack C. J. Wadsworth	Ğ G
Distributing machineN. Meronek Door Building and car. E. C. Schroeder	G
Door, Building and car. E. C. Schröeder Door catch, Automatic. E. L. Watrous Door check M. Martin Door opening device G. B. Clay Dough treating mechanism C. Laukhuff Draft equalizer	G
Door opening deviceG. B. Clay Dough treating mechanismC. Laukhuff	G G
Draft equalizer	G G
Drinking fountainI. E. Johnsen Drinking fountainII. J. Milner	G
Drip can. J. C. A. Fitch Driving device. J. Mabus	G G
Dricker fadder. M. S. Godit Drinking fountain. J. E. Johnsen Drinking fountain. J. J. Milner Drip can. J. C. A. Fitch Driving device. J. Mabus Dye, Blue vat. M. Buff Dye, Greenish blue triphenylmethane M. Weiler	G G
Educational applianceL. T. Freeman Electric machine, DynamoH. II. Ralston Electric socket shell and shade holder	G
Electric socket shell and shade holder J. Hausen	
Electric switchC. A. Pfanstiehl Electric switchA. W. Clauder	G G
Electrical conductor supportT. E. Murray Electrical regenerative control apparatus	G G
Electric socket shell and shade holder	G
sels by	- G
kaline salts. M. Wildermann Electromagnet. H. O. Rugh	H
Electrotypes, Preparing molds for	
Electrotypes, Preparing molds for	H H H
Elevator safety deviceJ. Leopold Elevator signal system D. M. Porine	H
Embalmer's drainage tube. F. E. Hollins Embossing press. A E Stighero	H
Elevator safety appliance. P. W. Sommer Elevator safety device. J. Leopold Elevator signal system. D. M. Perine Embalmer's drainage tube. F. E. Hollins Embossing press. A. E. Stigberg End gate and scoop board, Combination W. F. Wolken Endoscope. R. H. Wappler Engine. J. H. Ebersole	H
Endoscope lt. H. Wappler Engine J. II. Ebersole	H H
Engine	H

Engine starting device, GasG. Chedru	
Envelop. F. Kaczynski Envelop. S. Kolek	
Engine starting device, GasG. Chedru EnvelopG. J. Hartke EnvelopF. Kaczynski EnvelopS. Kolek EnvelopL. B. Brown Evaporating fluidsF. P. Bergh et al. EvaporationC. R. Mabec Evener, Four horseJ. Miller	
Evaporation	
Excavating machine M. Munn Excavating machine O. W. Siebenhaar Explosive R. Imperiali Extension table C. Mosch Faucet	
Explosive	
Faucet II. H. Sherk Faucet C. W. Donholt	
Faucet. E. Godleskie Faucet. A. J. Katelsen	
Faucet. II. H. Sherk Faucet. C. W. Donholt Faucet. E. Godleskie Faucet. A. J. Katelsen Feeder, Automatic. C. Owens Feeder, Automatic stock. F. M. Stephens Feeder for steam boilers Automatic	
Feeder for steam boilers, Automatic	
metal containers, MechanicalA. Wilzin	
Feeding live stock, Time-operated apparates for	
Feeding device	
Ferrule closing mechanism. G. W. Benton Fiber cleaning machine. H. L. Vangban	
Fiber extracting apparatusJ. O. Drews Fibrous materials, Treatment of	
Fibrous materials, Treatment of	
Files, Cutting	
Fire alarm apparatusG. T. Moore Fire alarm box door keys, Guard for	
Fire alarm box lockA. Glock	
Fire box	
Fire igniting deviceG. Morge Fire protection signal system	
Firearm, Repeating F. F. Knous	
Fish dressing machine J. E. Smith	
Fishing and like linesA. H. Illingworth	
Fire alarm apparatus. G. T. Moore Fire alarm box door keys, Guard for	
Flower holder	
Fluid compressor regulator W Raymond	
Fluid meter	
Fluid pressure apparatusT. and W. Moss Fly trap for screen doorsW. D. Baker	
Flying machine	
Flying machine	
Forks, Band cutter, attachment for	
Form, Garment (2 pats)E. Levin Frog trapC. M. Suck	
Furnace casing (2 pats)T. E. Durban	
Furnace casing E. P. Selden Fuse switch	
Furnace casing. E. P. Selden Fuse switchA. L. Weeks GageC. A. Glickert GameR. S. Crocker Came	
Furnace casing E. P. Selden Fuse switch A. L. Weeks Gage C. A. Glickert Game R. S. Crocker Game apparatus II. W. Standidge Game apparatus W. Lammersen Game annuatus W. F. Shea	
Furnace casing. E. P. Selden Fuse switch. A. L. Weeks Gage. C. A. Glickert Game. R. S. Crocker Game apparatus. II. W. Standidge Game apparatus. W. Lammersen Game apparatus. M. F. Shea Game apparatus. H. R. Stevenson Garment. R. Sato	
Forks, Band cutter, attachment for	
Furnace casing. E. P. Selden Fuse switch A. L. Weeks Gage. C. A. Glickert Game R. S. Crocker Game apparatus. II. W. Standidge Game apparatus. W. Lammersen Game apparatus. M. F. Shea Game apparatus. H. R. Stevenson Garment R. Sato Garment fastener. F. M. Pierce Garment langer and stretcher A. J. Ketelsen Garment presser and stretcher	
Furnace casing E. P. Selden Fuse switch A. L. Weeks Gage C. A. Glickert Game R. S. Crocker Game apparatus II. W. Standidge Game apparatus W. Lammersen Game apparatus M. F. Shea Game apparatus H. R. Stevenson Garment R. Sato Garment fastener F. M. Pierce Garment hanger and stretcher Garment presser and stretcher L. J. P. Paddington Garter fastening E. N. Humprey	
Garment fastenerF. M. Pierce Garment hanger and stretcher A. J. Ketelsen Garment presser and stretcher J. P. Paddington Garter fasteningE. N. Humprey Gas and lime manufacturing apparatus	
Garment fastener. F. M. Pierce Garment hanger and stretcher. A. J. Ketelsen Garment presser and stretcher. J. P. Paddington Garter fastening. E. N. Humprey Gas and line manufacturing apparatus. G. G. Floyd	
Garment fastener. F. M. Pierce Garment hanger and stretcher. A. J. Ketelsen Garment presser and stretcher. J. P. Paddington Garter fastening. E. N. Humprey Gas and line manufacturing apparatus. G. G. Floyd	
Garment fastener. F. M. Pierce Garment hanger and stretcher. A. J. Ketelsen Garment presser and stretcher. J. P. Paddington Garter fastening. E. N. Humprey Gas and line manufacturing apparatus. G. G. Floyd	
Garment fastener. F. M. Pierce Garment hanger and stretcher. A. J. Ketelsen Garment presser and stretcher. J. P. Paddington Garter fastening. E. N. Humprey Gas and line manufacturing apparatus. G. G. Floyd	
Garment fastener	
Garment hanger and stretcher	

ngine starting device, GasG. Chedru	Heat exchanger
nvelopG. J. Hartke nvelopF. Kaczynski	Heater
nvelopS. Kolek nvelopL. B. Brown	Heel plateS. Lowman Hinge and hanger, Combined. E. L. Watrous
vaporating fluidsF. P. Bergh et al.	Hoisting deviceL. Roman
vaporation	HolderJ. Kopsa Hook and eyeA. F. Wileman
xcavating machineA. M. Munn xcavating machineO. W. Siebenhaar	Hopper, Dry-food. W. A. Sexton Horseshoe. G. W. Mooers
xplosive	Horseshoe attachmentP. C. Dean
xtension tableC. Mosch aucetII. H. Sherk	Horseshoe making machineE. V. Gandil Horseshoes, Sandal forJ. B. Kopf
aucet	Hotels and other places, Indicator for
aucet	Hydrant and stop and waste cock, Com-
eeder, Automatic	binedP. and H. Mueller Hydrocarbon-motorA. G. Fowler
eeder for steam boilers, Automatic T. J. Whitney	HygrometerJ. A. Thompsou Identification device, Illuminating
eeding apparatus for machines for closing	F. L. Briggs et al.
metal containers, MechanicalA. Wilzin eeding device	Igniter E. F. Koehler Illuminating device H. E. Marcy
eeding live stock, Time-operated apparatus for	Incandescing conductors, Terminal for A. O. Appelberg
eeding water to steam boilers, Apparatus for	Insulator, ElectricG. W. Chaffin Insulator, High voltageF. M. Locke
errule closing mechanismG. W. Benton	Internal combination engine Butsch
iber cleaning machineH. L. Vanghan iber extracting apparatusJ. O. Drews	Internal combustion engineE. Franklin Ironing machineJ. W. Johnson
ibrous materials. Treatment of	Irrigating systemJ. D. McCrimmon Kinetoscopes. Automatic film protecting
ile of transfer caseP. H. Yawman	screen for A. F. Gall Knitting machine bur, Circular
iles, CuttingJ. Neill ilm holderC. W. Judd ire alarm apparatusG. T. Moore	
ire alarm apparatusG. T. Moore ire alarm box door keys. Guard for	Lace machine carriageF. Creassey Lamp chimney, IncubatorG. H. Lee
	Lamp, Electric arcS. Szubert Lamp, Electric mercury vaporJ. M. Anck
ire box. T. H. Garland ire extinguisher. W. S. Kellogg et al.	Lamp lighting attachment, Miner's
ire extinguisherW. S. Kellogg et al. ire igniting deviceG. Morge	Lamp shade holder, Incandescent electric.
ire protection signal system	Land and corn roller, Combined
irearm. RepeatingF. F. Knous	F. Gordon et al.
ireproof structureJ. G. Wilson ish dressing machineA. E. Smith	Latch lock (Reissue) D. E. Shrauger Latch lock (Reissue) D. W. Tower
ish scaling deviceE. Oakleaf ishing and like linesA. H. Illingworth	Lathes and the like, Device for feeding material in turretC. Munthe et al.
ishing rods, &c., Lock joint for	Lathes. Clamping mechanism for multiple-
loatJ. W. Young	spindleD. Milliugton et al. Lawn and street cleaning device
lower holder	Lawn cleauer
luid compressor regulatorW. Raymond	Lawn edgerF. J. Vondracek Leus grinding machineM. A. Laubs
luid meter	Lever-lockA. B. Diedrich
uid operated engineB. V. Nordberg- luid pressure apparatusT. and W. Moss	Life beltF. Jonata Lifting jackA. O. Slentz
ly trap for screen doorsW. D. Baker lying machineW. N. Searcy	Liquid fuel burnerW. L. Hawkins Loading deviceI. N. Myers
lying machine (2 pats)J. C. Schleicher	Locket J. C. Daniels
olding boxC. H. Goodyear olding machineII. B. Harrison	Lug strap
orks, Band cutter, attachment for	Machine toolR. Beuttenmuller Magnet for electric motors and generators,
orm, Garment (2 pats)E. Levin rog trapC. M. Suck	Field
urnace	&c., Production of predetermined distribu-
urnace casingE. P. Selden	tion of
use switch	Malting apparatus
ame	Mandolin piekA. F. Willat Manifold, IntakeW. E. Scripps
ame apparatusW. Lammersen ame apparatusM. F. Shea	Manifolding sheetsG. W. Dickey Manure loaderE. M. Warrenfeltz
ame apparatusH. R. Stevenson	Massage implementC. Czinjak Match receptacleR. L. Darden
arment	Match safeF. B. Colmyer
arment hanger and stretcher	Match safe, NoveltyG. C. Openshaw Match safe, PocketJ. H. Royer
arment presser and stretcherJ. P. Paddington	Measuring device, ColorF. Hellige Meat hangerL. P. Fisher
arter fasteningE. N. Humprey as and lime manufacturing apparatns	Mercury vapor apparatus, Method of and
as and time manufacturing apparatus	apparatus for starting and operating P. C. Hewitt
as connections, Safety signaling device forF. Frey	Metal swaging dies, Construction of
as engine	Metallic tie and rail fastenerS. Slyk Meter recording mechanismR. C. Lanphier
as generator, AcetyleneT. G. Allen	Milk powder. Manufacture of dry
as generators. Water feed mechanism for acetylene	Milking machineF. J. Johansson et al.
as mixerE. McArdle as plants. Recovering acetic acid in pro-	Milling cutterT. R. Hellgren Miter boxG. R. Hill
ducerW. I. Crossley et al. as producerA. S. Cambridge	Miter box G. R. Hill Miter box J. L. Nnnamaker Mop holder
as producerJ. R. George	Motor control system H. A. Steen Motor control system, Electric. J. H. Hall
as scrubber	Motor controller
ate operating mechanism	Music, Means for turning the pages of sheetE. J. Schleicher
ear casing	Music rolls, Machine for marking perforated P. J. Machl
lass cylinders, Method of and apparatus	Music sheet feeding device for self-playing instruments. Electric H. K. Sandell
for splittingM. K. McMullin lass grinding machines, Feeding device	Music-transcribing indicator
for	Nut blanks from stock bars, Producing
raiu tempering and polishing device	Nut castellating machine, Antomatic
rain treating apparatus. R. E. L. Grubbs rate A. W. Hulson	Nut lock
rinder, Table pepperL. E. Deudon	Nut lockJ. C. Webber
rinders, Work holder forJ. L. Burleson rinding attachment, Hob	Nut lock. E. E. Hanson et al. Nut lock. J. H. Seeton
rinding machineG. A Hattersley et al.	Nut lock
umming machineC. H. Heywood et al. lammer. PneumaticG. L. Badger	ling. P. Mueller Nuteracking machine (2 pats) . B. W. Elder
lammer, PneumaticC. F. Duval et al.	Oar lock
fandle and combined locking member and retainer therefor	Oar lock, FoldingJ. M. Birtels Oil burnerM. A. Fesler
landle holder, AdjustableC. H. Ressler larrowL. O. Ekrem	Oil feed for die stocks, Antomatic H. and T. Heer
[arvester attachmentB. Karst	Oil tank. J. B. Price Ore washer. A. M. Gow
farvester attachment, Corn. W. H. Bean farvester, BeetW. K. Lewis	Organ, stop action
farvester sacking and assorting attachent, Potato	Oyster openerA. F. Hall Pack opening apparatusC. W. Rray Package for liquidsJ. R. Van Wormer
at creasing form or block, Adjustable M. F. Thau	Packing
at guardA. Wallace, Jr. lat-tip clipping machineH. B. Mallory	Packing for piston rods, &c., metallic W. Foden
leadlight shadeJ. R. Green	Pail bottom

```
Panel sanding machine....J. W._Kroeze
   Pencil sharpeners, Pencil holding means for.

C. C. Spengler
Penholder F. W. Wright
Pentachlorobenzaldehyde M. Weiler
Phonograph horn crane P. Weber
Piano key mounting E. A. Mayor
Piano lid, Upright T. E. Steinway
Piano playing attachments, Treadle for E. T. Tnrney
Pianos, &c., Fall board for E. T. Tnrney
Pianos, Fall board for horizontal grand N. D. Hosley
Pianos and Pedal mechanism for automatically operated N. P. Larson
Pianos, Pnenmatic action for P. Wiggen
Pianos, Pneumatic for automatic player A. G. Gulbransen
Printing presses, Feed attachment for cylinder. C. Korzenborn, Jr. Projectile. J. T. S. Schouboe Propelling means, Boat. C. A. McCallister Propelling means, Boat. C. A. McCallister Propelling mechanism, Boat. G. Scott Protective device. V. Karapetoff Pump. C. W. Darrow Pump. B. Osgood Pump. B. Osgood Pump. B. Osgood Pump. B. Osgood Pump. B. C. W. Darrow Pump. B. Osgood Pump. C. W. C. Parsons Pump and cushion, Combined air. B. W. Smith Pump for initating rubber tires. C. A. Haas Pump. Oil well. D. Daniels Pumping system. F. F. Davis et al. Pump. Oil well. D. Daniels Punping system. F. F. Davis et al. Pump. Oil well. D. Daniels Punping system. F. C. Weber Punching machiue. E. V. Bair Radiator element. E. and H. Behringer Rail binder. J. Goldsmith et al. Rail clamping chair. J. W. Jones Rail joint. G. C. Hager Rail joint. S. H. McCarty et al. Rail joint. S. H. McCarty et al. Rail joint. S. H. McCarty et al. Rail stay (2 pats). H. H. Sponenburg Railway rail brace. W. A. Keaton et al. Railway switching mechanism, Trip device for actuating electric. F. H. Kaiser Railway tic. D. B. Biser Railway tic. D. B. Biser Railway tic. D. B. Biser Railway tics. Iusulated connection for metallic. F. G. Metcalf Raisin seeding and packing process and apparatus. N. B. Converse Razor, Safety. R. Kampfe Razor, Safety. R. Ka
```

Slack controlling device. D. B. Whitchill Slide changer	
Sound producer and recorded	
Soundings, Apparatus for taking	
Spark plng holderW. J. Randolph, Jr. Spark producerW. W. Williams	
Speed controlling meansE. Hunter Speed indicator, RecordingJ. O. Tonkin	,
Spigot, Locking. J. F. Koch Spindle lock. M. Omalia	,
Spraying machine. F. W. Herz Sprinkler head, Automatic. J. R. Hamilton	,
Stamping machine	
Means for affixing	1
Steam generationJ. E. Fletcher Steaming drying and cooling apparatus	
Steering apparatus, vesselJ. S. Clarke	
Stereotype plate elampE. W. Cooper Storage battery, ElectricB. Ford	
Stove D. J. Rogers et al. Stove, Cabinet M. C. Scrote	
Straightening machine. J. S. Bachman et al. Street sweeper	4
Superphosphates, MakingG. Cusatelli	4 4 4
Swimming applianceJ. G. Alfier et al.	1
Switch operating mechanism	4 4
Switch receptacle, Electric. J. G. Peterson Tabulating apparatus. JI Hollerith	4 4
Tailoring instrumentG. Oshorne Tea or other goods. Machine for packing	ž
Telegraphs, Recording mechanism for engine	į
roomO. Deam Telephone, MagnetieW. W. Dean	4
Telephone systemR. C. Smith	À T
Temperature regulatorA. N. Ozias Tent, LambingF. W. Burch	1
Terminal elamp (2 pats)J. D. Robertson	1 1 1 1
Thread board, Self balanced. C. E. Williams Thread enting tool F. O. James Jr.	1 4 4
Switch construction, Automatic. F. Tolbert Switch operating mechanism	4 4
Tile	1
Tire caseF. Whitney C. H. Semple	1
	١.
Tire puneture closing device, Pneumatic	ı,
Tire, Vehiele J. W. Driscoll	I
serting the sameP. A. Drncklieb	İ
	I
Torpedo, AutomobileW. M. Douglas Torsionmeters, Collector brush for	В
Toy E. T. Gibson	I
Toy hen and chicken. J. A. Ekclund Toy kicking horse. J. A. Ekclund	B
Train-stopping device, Antomatic	E
Tramway, Double ropeS. A. Cooney I	B
Trap H. W. Miller Trolley head P. Brandell	В
Tuhe making machine, Spiral. J. W. Wallis Turhine, Elastie fluidW. J. A. London	B
Type holder	В
Typewriting machineA. W. Hewitt	B
Valve. L. E. Bowser I. J. Mysor I.	BB
Valve and operating mechanism therefor. I	BB
Valve, Automatic vacuum air. A. O'Brien 1	3
Valve for oil and gas wells, Shut off I	3 B
Valve for two cylinder engines	
Valve gear for apparatus for raising I liquids	3
Valve regulator. Exhanst II. J. Criner I	3
Valve, ThermostaticF. W. Robertshaw F. Vault, Metallic graveJ. E. Myers	3
Vehicle brake	3
Vehicle wheel, springW. H. Fahrney Vehicles, Rnnner attachment for	
Velvet burnishing toolR. Rohsow et al. C. Vessel, HydroplaneG. R. Clifford	17.7
Vessels, Device for raising sunken	
sure gage, Combination L. P. Norton Watch fob II. O. Beck	
Water eooling deviceR. Y. Boyer et al. Water gages, lubricators, or the like, Sight	
feed tube for F. Leonhardt Water heater H. S. Humphrey	7
Water heater, Instantancons	
Water purifying apparatus	H
Water heater. J. B. Jones Water heater, Instantancons	7.7
Well drilling device J. T. Owen C. Well mechanism M. E. Layne C.	7
Whistles on vessels, Device for blowing C	- •
Winding machine	740
Winding machine J. S. Clarke Winding machine A. Rotter	7.7.7

Winding mechanismP. Butler
Windmill E. M. Amy
Window eonstructionF. T. Lippincott
Window fastener
Window screenA. D. Be Vier et al.
Window screenA. L. Ladwig et al.
Window screenJ. E. H. Cannon
Window ventilator and fly escape
Wire fabric
Wire straightening and cutting machine
Worsted fahricS. Belok
WrenchS. M. Barabe
Yarn, Apparatus for examiningW. Erben
Yarn mercerizing machineP. Hahn
Yarn packageS. W. Wardwell
Zinc, Electrolytic refining of
K. Namekawa et al.

Issued July 25, 1911.

MECHANICAL PATENTS. Adding and listing machine. G. B. Putnam Adding and listing machine. J. G. Vincent Adding machine. C. B. Corell Adjustable seat or the like. . W. H. Irvine Advertising exhibitor and phonographic annueiator. . . . G. A. Stafford Aerial navigating apparatus. . H. Flanagan Aerial navigating device. . J. W. Boughton Acrial vessel. . . . E. A. Norris Aeroplane, Centrifugal . J. W. Fawkes Aeroplanes, Automatic equilibrating device for . . . J. Danziger for J. Danziger
Agricultural machines, Actuating mechanism for G. F. Conner
Air brake hose coupling N. Clegg
Air circulator J. Keith Air brake hose conpling.

Air circulator.

J. Keith
Airship.

J. R. Froberg
Airship attachment.

G. P. N. Sadler
Airship, Gas aeroplane motor.

II. Von der Oelsnitz
Alarm.

G. V. Rnss
Alloy.

J. Jones
H. Haber et al. Alarm.
Alloy.
Alloy.
Ammonia, Making.
F. H. Haber et al.
Anchor Ground.
F. V. Simpson
Ankle support and protector.
Anthranol, Manufacture of.
F. Singer
Antiskidding device for automobiles.
R. A. Moore Automobile, Differential driving gearing for.

Awl for pricking heels. ... G. M. Pettengill
Axle journal brass, Car. F. A. McArthur
Bag holder. ... F. Cords
Bag holder. ... F. Cords
Bag holder. ... F. Cords
Bag holder. ... F. Cords
Bag holder. ... F. Cords
Bag holder. ... F. Cords
Bag holder. ... F. Cords
Bag holder. ... F. Cords
Bag holder. ... F. Cords
Bag holder. ... F. Cords
Bag holder. ... F. Cords
Bag holder. ... F. Cords
Bag holder. ... F. Cords
Bag holder. ... F. Cords
Bag holder. ... F. Cords
Bag holder. ... F. Cords
Bag holder. ... F. Cords
Bag holder. ... F. A. Wold
Bead chair, and table, Combination. ...

T. Engstvand
Bed sofa. ... J. M. swenson et al.
Beer making apparatus. E. Unimann
Bieycle lock and bell, Combined. ... F. Thomas
Bind dispensing attachment. L. B. Thomas
Binder, File. ... A. Faifer
Bituminous compound and marking the
same, Liquid ... H. S. Casson et al.
Blade burnishing machine. ... A. J. Gurnea
Blank cutting machine. ... A. J. Gurnea
Blank cutting machine. ... W. McClave
Boat. Floating flying. ... J. P. C. Bonseal
Blobbin and spindle connector. ...

J. Roney et al.
Bobbin holder. ... T. J. Murdock
Boilers, Means for preventing rust in ...

A. S. Hickey
Boat and shoe uppers, Machine for forming. ... K. Engel
Boots and shoes, Maehine for the manufacture of ... A. W. Matthews
Bottle maehine, Glass ... J. A. Burleigh
Bottle maehine, Glass ... S. E. Winder
Bottle maehine, Glass ... S. E. Winder
Bottle maehine, Glass ... S. E. Winder
Bottle washer ... H. Krause
Box cover clamp ... C. R. Keating
Box fastening ... S. Whitehall
Boxes, Means for locking metal bound ...

Boxes, Means for locking metal bound ...

D. P. Fleming
Box fastening ... S. Whitehall
Boxes, Means for locking metal bound ...

Boxes, Means for locking metal bound ...

Boxes and shoes machine ... F. G. Bird
Brick Key and lock ... S. S. Swift
Bridle attachment ... I. Allison
Brash Separable tooth ... A. L. Bonin
Brush Spray ... E. M. Crawford
Bucket, Pump ... D. J. Dowling
Butter cufter ... R. F. Stewart
Button blank c Candy making machine....W. T. Hudson
Car coupling releasing means....

Car door, Grain....J. W. Foizey
Car Dump....F. S. Ingoldsby
Car fender...P. F. Matthews
Car roof...J. J. Hoffman
Car underframe (2 pats)...G. I. King
Car wheel...W. Young
Cars. Drive gear for motor. F. A. Ferguson
Carbon cap...A. C. Recker arbon cap......A. C. Recker arbureters. Starting heater for......C. W. Avery et al.

Carbureting apparatus.....G. H. Skinner Dyestuffs, Manufacture of brown sulfuriz Dyestuffs, Manufacture of brown sulfurized vat. A. L. Laska Egg carrier J. Lunke Egg holder S. Mrksity Electric brake W. F. Moody Electric conductor support W. E. Foote Electric light fixture and hanger F. P. Harrison Electric machine, Dynamo W. F. Dawson Electric switch C. Loeffler Electrode, Arc lamp Electrode, Cast K. Tornberg Electrodytic cell (Reissue) G. O. Seward et al. Elevated carrier A. H. Nöller Elevator gnide Inbricator F. G. Phillips Emasculator Hoop A. N. Thomas Engine (2 pats) G. W. Baker Engine or motor G. Lebberger Engine or motor......G. Lehberger

Engine steering mechanism, Traction.

E. E. I complete the Engine stopping device.

Engines, Mechanism for governing explosive.

II. do La Valette Engines, Steam pipe for locomotives.

F. J. Cole Envelop.

B. A. Raymer et al. Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating machine.

Excavating explosion. Engine steering mechanism, Traction. Fan. Rotary.

D. Fraser
Farm gate.

II. H. Beff
Faucet.

R. Howell
Feed, heater and purifier for steam boilers,
Water.

S. M. Walker
Feed regulator.

F. M. Lyon
Feed water purifier, heater, and circulator.

J. C. Bennett
Feeding mechanism.

G. L. Hoyt
Feeding trough, Cattle. W. A. McCullough
Firearm.

F. K. Young
Firearm, Repeating.

F. K. Young
Fireproof door.

E. R. Leonard
Floor controller.

A. Sundh
Fluid distributing device.

C. P. Price
Flushing apparatus. Catch basin.

M. H. Anderson
Fly fan, Screen door.

J. A. Painter
Flying machine.

A. L. McKeeth
Flying machine.

K. Leon
Fob chain, bracelet. &c., and making same.

G. H. Berthold
Foldable chair.

E. L. Knrz Fly fan, Sereen door. J. A. Painter Flying machine. A. L. McKeeth Flying machine. A. L. McKeeth Flying machine. M. K. Leon Fob chain, bracelet. &c., and making same. G. H. Berthold Foldable chair. E. L. Knnz Folding box and crate. G. W. Erhart Forging machine. H. Liehteiker Freight conveyor. G. W. Yonnkman Frying pan. R. F. Simmons Fuel press. D. C. McCan Furnaces. The foreight conveyor. G. W. Yonnkman Frying pan. R. F. Simmons Fuel press. D. C. McCan Furnaces. Tilting forehearth for .T. Lohe Furrow covering machine. F. J. Zippler Furnaces. Tilting forehearth for .T. Lohe Furrow opening disks. Scraper for. G. Cast Fusee, Railway signal. F. Dutcher Galvanometer. F. Aronson Game apparatus. S. J. Connies Game device. B. G. Ward Game apparatus. S. J. Connies Game device. B. G. Ward Game piece. C. C. Schutz Garment. J. L. Howenstine Garment. S. Treinis Gas generator, Acetylene. L. E. Bostrom Gas producer. J. A. Herrick Gas producer. J. A. Herrick Gas producer. G. Steinl Gas broducers and heating apparatus. Finel feeder for. N. Lallie Gas scribber. G. M. S. Tait Gear. E. J. Frost Gearing, Transmission. C. M. Hansen Glass articles, Machine for forming and blowing. J. L. Arbogast Glass in molds, Packing. F. W. Pawling Glass work, Ornamental.

C. H. Kloster et al. Grading machine. C. R. Dunn Graining tool. F. M. Clapp Graining tool. F. M. Clapp Graining tool. F. M. Clapp Graining tool. F. M. Clapp Graining tool. F. M. Clapp Graining tool. F. M. Clapp Graining tool. F. M. Clapp Graining tool. F. M. Clapp Graining tool. F. M. Clapp Graining tool. F. W. Pawling Hammer. Prenmatic. R. A. Norling Hammer tools, Rotation device for fluid pressure operated. A. H. Taylor Hammer tools. Rotation device for fluid pressure operated. A. H. Taylor Hammer tools. Rotation device for fluid pressure operated. A. H. Taylor Hammer tools. Rotation device for fluid pressure operated. A. H. Taylor Hammer tools. Rotation device for fluid pressure operated. A. H. Taylor Hammer tools. Rotation device for fluid pressure operated. A. H. Taylor Harne Insole duck cutter and paster.

G. T. Stockton
Insole reinforcing machine (Reissue)...
C. P. Stanbon
Insulator bracket for electrical work...
F. K. Spencer et al.
Intestine cleaning apparatus...
G. S. Billman
Ironing board...
C. B. Reynolds
Joint forming means...
H. W. Jacobs
Knife guard, Plane...
Knuckle pin retaining device...

(Continued in October Number)

(Continued in October Number)

An Irresistible Bargain

\$1.75 Value for Only \$1.15

ALL FOR ONLY \$1.15

One Year's Subscription for McCall's Magazine, Any 15-Cent McCall Pattern you may select, One Year's Subscription for the Inventive Age

McCall's Magazine

Is a large, artistic, handsomely illustrated hundred-page monthly magazine. It contains sixty new Fashion Designs in each issue. Every woman needs it for its up-to-date fashions, entertaining stories and complete information on all home and personal topics. Over one million subscribers. Acknowledged the best Home and Fashion Magazine. Regular price, 5 cents a copy. Worth double.



McCall Patterns

So simple you cannot misunderstand them. Absolutely accurate. In style, irreproachable. You may select, free, any McCall Pattern you desire from the first number of the magazine which reaches you. Regular price, 15 cents.

The Inventive Age.

A journal of manufacturing industry and scientific progress. The indispensable paper for patentees. Contains matter and information not found elsewhere. Regular price, \$1.00 per year.

DON'T MISS THIS EXTRAORDINARY OFFER. Address: THE INVENTIVE AGE Publishing Co., Washington, D. C.

The DIAMOND

SELF-FILLING AND SELF-CLEANING

Fountain Pen.

IT IS AWAY AHEAD
OF ANY OTHER PEN
MANUFACTURED BECAUSE OF ITS SELFFILLING AND SELFCLEANING FEATURES.





Including one year's subscription to "The Inventive Age."

Price \$2.00.

No Lost Time.

No Soiled Fingers.

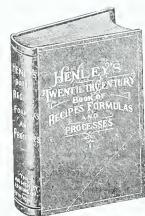
Address

INVENTIVE AGE PUB'L. COMPANY, WASHINGTON, D. C.

HENLEY'S TWENTIETH CENTURY BOOK OF

Recipes, Formulas & Processes







Edited by GARDNER D. HISCOX, M. E.

Price, \$3.00 Cloth Binding

\$4.00 Half Morocco Binding

800 large Octavo (6 x $9\frac{1}{2}$) Pages.

Contains over 10,000 Selected Scientsic, Chemical, Fechnological, and Practical Recipes and Processes,

Including Hundreds of so-called Trade Secrets for every business.

This is THE BOOK everyone should have at his command who seeks PRACTICAL, ACCURATE KNOWLEDGE and GUIDANCE in his every-day work, as no book has ever been published which so fully meets the multifarious requirements of the factory, the workshop, the laboratory, and the household. In preparing the work for so exacting and numerous a class of readers the Editor has exerted every effort to present only information which is practical, accurate and modern.

Address

INVENTIVE AGE PUB'L. COMPANY WASHINGTON, D. C.

SEND FOR OUR FREE CATALOGUE OF BOOKS FOR INVENTORS AND MECHANICS.

Address: THE INVENTIVE AGE PUBL'G CO., 918 F St., Washington, D. C.



Vol. XXIII. No. 10.

Washington, D. C.—October 1, 1911.

SINGLE COPIES 10 CENTS.

a 1994 - THE NEW EDISON-BEACH STORAGE BATTERY CAR.

By FRANK C. PERKINS.

WHILE many storage battery cars congested streets of the ferry and of time, on account of the excessive stops every 300 feet in this service. cost of the battery maintenance, and current consumption. The developstorage battery traction, and an celeration. electric street car has been perfected by Ralph H. Beach utilizing the new nickel-iron storage battery with an alkali electrolyte. One of the most important features is that it is far lighter than the older storage batteries, thus permitting the dead weight of the entire car structure, including the battery, to be reduced to a minimum. The accompanying illustration shows one of these storage battery cars in operation in New York City.

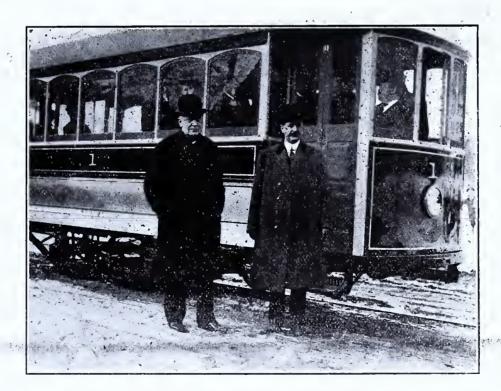
These single truck cars, which have a mileage capacity per battery charge, are equipped with 105 cells of Edison battery, on 85 miles of railway. It is stated that under ordinary track and traffic conditions obtaining over most electric railways, a capacity from 75 to 100 miles is allowed per single normal charge of the battery, which requires seven hours. When it is possible to permit the cars to stand and give the batteries intermediate charges or "boosts" of from 10 to 30 minutes each, occasionally during the day's work, cars may be kept at work from eighteen to twenty hours and a much greater mileage obtained.

It is maintained that in Massachusetts, the average mileage per day per car is 42 miles, considering all electric railway cars, and in New day is 48 miles, considering all cars is required. of the surface car system.

have been developed during the shopping districts of the American past two decades, very few have been metropolis. The car makes eight to maintained in operation for any length nine full stops per mile, and partial

It is stated that the car frequently gets into great entanglements and ment of the storage battery of Thomas blockades of vehicles and pedestrians, A. Edison and its adaptation to auto- the frequent starting and stopping remobile service with most satisfactory quiring perfect control of the car, low results, has given a new impetus to current consumption, and ready ac-

seating capacity for approximately fifty passengers. The upper sash in this car body is not adjustable, but permanent, and the lower sash rises into the roof in a vertical line, sufficiently to give a suitable view or opening for ventilation. The arrangement of these windows is such that a man six feet in height may stand in any part of the car and see out of the window without stooping, and when seated have a clear line of vision be-



THE NEW EDISON-BEACH STORAGE BATTERY CAR. THOMAS A. EDISON & RALPH H, BEACH IN FOREGROUND.

The car has roller bearing truck journals, the truck frame being oxyacetylene welded. The wheels are of steel with axles of steel divided in the center. The coupling on the divided axle is bushed with a "metaline" York City the average mileage per sleeve so that no attention or oiling

The overall length of this body is These cars are in regular operation 26½ feet, and the length of seat 18 feet. on the 28th street Crosstown Railroad, It has a seating capacity for twenty-New York City, through the densely six passengers, and a standing and

low the lower line of the upper sash. This is a combination of windows not possible in an ordinary monitor deck car. It will be noted that the monitordeck is eliminated in this car, and the ventilation is secured by adjustable windows over the platform hood in the transom, while the platform is full vestibule.

In this storage battery car there are no bulkhead doors. The lattice steel girders perform the function of giving longitudinal rigidity to the entire car body structure. They also support the side posts, and act as a receptacle for the batteries. By this combination, a very light structure is possible, together with strength greater than is ordinarily employed in car construction. The roof is made with a bent carline running across from post to post and conforming to the curvature of the roof. The outer and inner carlines meet in the center and are screwed together and also steel plated, preventing distortion. On the outside basswood tongued and grooved strips, 5.16 of an inch thick, are laid in white lead, and over these a duck covering is placed, which is thoroughly white leaded to prevent admission of moisture. The head lining of the car is one quarter inch composite board, molded to conform to the shape of the roof. By this method the eccentric arches support one another and tend to resist any distortion. Experience proves this method of roof construction to be light and of unusual strength.

It is held that the Edison battery may be overcharged, up to four or five times its normal rate, for short intervals of time, without injury, so that if the car be allowed to stand occasionally during the day with these short overcharges it may pick up enough current to operate it a considerable distance, and the maximum battery capacity and equipment are not needed, thereby reducing the cost of the cars and also of moving the extra battery equipment on the cars when not needed.

It is well known that other batteries cannot be overcharged without injury. The Edison battery is enclosed in a nickeled steel case, instead of the glass or rubber jars used in other batteries, and it is a substantial structure, capable of withstanding the rough usage, strains and shocks to which it is subject in street railway

work where the track is in bad condition.

It is claimed that this battery has a greater working capacity than other batteries per unit of weight, and the voltage is maintained at normal down to the complete exhaustion (or very nearly) of the battery charge, while the average watt-hour efficiency is only 50 per cent to 62 per cent (the loss corresponding to line loss between power house and car motors in trolley practice). The watt-hour efficiency may be increased to almost 80per cent by giving the battery the short "boosts" or intermediate charges at the high rate. About 33 per cent in first cost and in operation expenses are saved, compared with a line equipped with trolley cars of the same capacity. On a twenty mile road, for example, built for and equipped with these cars, the saving in construction or first cost amounts to about \$8,000 per mile.

A Natural Ice Plant.

Nature manufactures ice the year around, and this not only at the poles, but in a part of the world where the product is much more appreciated. The work is done in a cavern, and the method is not unlike that of the most modern of ice plants. There is a cuplike formation in the earth in the floor of this cave, which is in central Oregon, and at the bottomice forms regularly over an area of about 15 square feet. At one side of the chamber a small tunnel connects with another compartment in which the ice likewise forms the floor. The ice is clean and sanitary, and a company mines and sells it regularly. Out in the open air at the mouth of the cavern the temperature often stands at over 100 in summer, but 50 feet down the freezing point is reached. Blocks of ice weighing from 200 to 500 pounds are daily out from the floors, and by the next day the space is filled with a fresh supply. The exact cause of the formation is not known, but the Geological Survey is of opinion that water from a neighboring river seeps through the sub-surface volcanic ash of the region until it comes near the cavern, where it is brought into contact with an atmosphere that has been chilled by deposits of salines and chemicals, which are about the same as those used in the manufacture of artificial ice. The porous nature of the cavity admits of currents of air passing rapidly through, and these being chilled, freeze the water as it filters down. This is merely a theory, however. It will never be positively known how the job is done until some one digs through the ice and rock and examines the condition of the earth below. But this the owners of the ice mine are not likely to permit, so long as it returns its present profits.

To keep themselves posted in the progress of the arts in which they are interested, inventors and manufacturers should subscribe for the IN-VENTIVE AGE, which publishes a list of all patents issued each month. The low subscription price and the character of the publication entitle it to the support of all the inventors of the country.

THE WORLD'S DEBT TO WIRELESS.

many as fifty persons has been allowed to leave any port in the United States on a voyage of two hundred miles or more, unless it was equipped with wireless telegraph apparatus. This is the new law on the subject, and the apparatus must furthermore be capable of transmitting and receiving messages over a distance of at least one hundred miles, day or night, and be in charge of a competent operator.

No sleek and stealthy lobby, dispensing cigars, champagne and sophistries with lavish hand, says the Technical World, accelerated the passage of this law. The statute was enacted because it provided a safeguard for travelers by sea so efficient and so obviously needed that even a congressman could not fail to perceive the wisdom of voting for it. Even without the strong encouragement of the law, without any influence whatever beyond the cold logic of achievement, the world's installation of wireless telegraph apparatus had grown to a grand total of 1520 stations on ship and shore, exclusive of foreign warships and amateur outfits, up to October of last year, according to a directory compiled by the U.S. Navy Department. Of this total, 821 stations were on steamships, yachts and tugs throughout the world. Of the shore stations the United States had 206, of which eighty-eight were on the Atlantic and Gulf coasts, forty-eight were on the Great Lakes, fifty-one on the Pacific coast, sixteen in Alaska and three in the interior. The United States Navy had 344 ship and 47 shore stations, the army 30 shore and 16 ship stations.

The transatlantic wireless business amounts to about 75,000 words a week. Wireless stations are being erected in New Zealand, also along the Amazon and Paraguay rivers.

This catalogue by no means includes all the activities of the radio-telegraph. It is used for such strange and different purposes as keeping trawlers in the North Sea posted on the state of the fish market and for giving the correct time to vessels within 3000 miles of the Eiffel Tower in Paris. Last spring the French Goverment began sending out time signals at midnight, at two minutes and again at four minutes past the hour. These time signals are expected to be of value to navigators by enabling them to correct daily any possible variations in their chronometers. A still more important application of the radio-telegraph is rendered possible by a wireless compass, by means of which the direction from which a wireless signal comes and also the approximate distance may be determined. This is a most valuable invention, for by this means a vessel approaching land in a fog may be directed so as to avoid danger of running ashore.

It is only ten years since Marconi installed the first wireless telegraph outfit on a merchant vessel for regular

Since July 1, no vessel carrying as service. Such a growth could hardly have been attained in so short a time by any mere money making device. The wireless telegraph has progressed so rapidly because to its solid commercial worth there has been added an extraordinary list of spectacular achievements in effecting the rescue of persons on sinking ships. It would probably be nearer the truth than such sweeping generalizations usually are, to assert that within the ten years of its commercial career, the wireless telegraph has saved more lives and more property than any other invention ever has in the same length of time. There are no official statistics on the subject, but it has been estimated by an engineer connected with the system that the value of ships with cargoes up to the end of last year, for which the wireless telegraph was used to summon assistance, amounted to a hundred million dollars, and the number of lives involved was about ten thousand.

> Not the least wonderful thing about the wireless is the distance messages are conveyed. Last summer the station near Hamburg kept up constant communication with a steamer all the way to Cameroon, German West Africa, a distance of four thousand miles. To reach their destination the waves had to pass over the Alps, the Algerian table land and the Adamana mountains. An exchange of messages between Key West, Florida, and Norfolk, Virginia, was picked up in San Francisco. Communication has been established between Italy and Nova Scotia, 4,500 miles away, and also between Argentina and Nova Scotia and Argentina and Ireland-distances of about five thousand six hundred miles. These were long distance tests made preliminary to the opening of the great station at Coltano, Italy, through which communication was to be maintained with Buenos Ayres, more than six thousand miles away. This great space has been bridged at an outlay of \$500,000 for two stations, which is but a fifth of what a cable between the same points would have cost, and the stations can be used for communication in other directions.

The usefulness of the wireless is still limited by some strange idiosyncrasies. No satisfactory explanation has been found for the fact that a ship may often be unable to communicate with another near by, yet readily keep in touch with distant stations. Sometimes apparatus with a normal range of 200 miles is able to communicate with stations 1200 miles away. A notable instance of this was the experience of the steamship Caronia off the coast of Sicily. It was wholly unable to get any of the Italian stations, but had no difficulty in communicating with England and Holland.

Another peculiarity is recognized by the law which requires that the wireless apparatus on shipboard shall be capable of sending messages by day as well as by night. The radio-

telegraph seems as fond of darkness as evil deeds are alleged to be. Only half as much power is required to send a message on the Atlantic after dark as is required during daylight hours, while on the Pacific only a fourth as much power is used in sending a night message as is needed by day. This strange difference between atmospheric conditions on the two oceans is very marked, for it takes five kilowatts to do on the Atlantic that for which two kilowatts will suffice on the Pacific. Morning and evening are trying times for operators, for when darkness extends only part way across the ocean, it is sometimes impossible to get signals through at all. Marconi explains this by saying that the electric waves are absorbed by the ionization of the gaseous molecules of the air by the ultra violet rays which emanate from the sun and which are largely absorbed in the upper atmosphere. He thinks it probable that this atmosphere, which is facing the sun, contains more electrons than the portion in the dark, and therefore the illumined and ionized air absorbs some of the energy of the electric waves. Apparently the length of the waves and the amplitude of the electric oscillations have much to do with this phenomenon, long waves and small amplitudes being less influenced by daylight than short waves and larger amplitudes. For comparatively short waves, such as are used for ship telegraphs, clear sunlight and blue skies act as a kind of fog. Mountains are no impediment to the wireless telegraph at night, but in the day time they greatly reduce the range of communication.

Sails on Railway Trains.

Chile can boast of a novelty in the use of sails as motive power on railways, according to the Railway and Engineering Review. In the vicinity of Antofagasta are several short roads which utilize the trade winds in this way. The idea of sailing cars is credited to an engineer in charge of government coast work. Impressed by the fact that a stiff breeze could be depended upon for several hours every morning and evening, he built several cars and provided each of them with a sail. The idea proved so practical that a number of such railways followed, the cheapness making a strong appeal. The speed attainable by the sailing cars is said to be as high as 35 miles an hour, but this may be checked as desired by the brakes. The trade winds blow with clock-like regularity.

How to Get Copies of Patents.

THE INVENTIVE AGE prints each month a list of the patents granted by the Patent Office. This list includes the name of the inventor, the title of the invention and the date of the patent. Anyone can procure through THE INVENTIVE AGE a copy of any patent included in the list, by giving the data and enclosing ten cents in stamps for each copy. There is no better way of keeping yourself informed about the progress of the arts than by scanning the list each month and ordering copies of patents.

A PLACE IN NEW YORK FOR THE INVENTOR.

Among the many useful departments of the New York Public Library is the one devoted to patents-a large, light and well ventilated room on the main floor in the northwest corner of the building. It contains all the publications that were a part of the patent department of the Astor Library, as well as many records the Astor Library did not have.

This department has been arranged in a manner that will make its files extremely valuable, because of the ease with which references may be had from them. The complete United States and British patents, also books and magazines relating to patents, are placed on the main floor, being the ones most frequently referred to, while the upper floor or gallery contains the Canadian, French, German and other foreign patents with those most used nearest the reader's seats. The readers have access to shelves, but must sign their names and addresses in the register before searching.

This department is open to any one interested in patents, designs or trade marks, daily except Sundays, from 9: A. M. to 6: P. M. The room contains 8890 feet of metallic shelving upon which is placed at present 13,393 volumes of the patent files of the world.

For the convenience of inventors and those who visit the patent department, a complete list of the records on file follows:

MAIN FLOOR:

UNITED STATES:-Patent Office Index 1790 to 1910 inclusive; Official Gazette 1871 to date; Complete Specification and Drawings 1871 to date; Report of the Commissioner of Patents 1839 to 1910: Decisions of the Commissioner of Patents 1875 to 1909.

GREAT BRITAIN:-Patent Office Index 1617 to 1900; Official Journal 1854 to date; Abridgments 1884 to 1910; Report of Patent, Design, & Trademark cases 1884 to 1910; Classified Abridgments 1865 to 1908; Patents for Inventions 1517 to 1910; Trademark Journal 1876 to date.

GALLERY:

AUSTRALIA: - Official Journal of Patents 1904 to date: Official Journal of Trademarks 1904 to date.

AUSTRIA:—Patent Journal 1889 to date.

Belgium:—Patent Journal 1854 to

BRAZIL:— Patent Journal 1907 to

date.

CANADA:—Patent Office Record 1873 to date.

DENMARK: - Specification and Draw-

ings 1904 to date. FRANCE:--Official Bulletin 1896 to date; Abstracts of Patents 1811 to

1896, and from 1899 to 1900; Specification and Drawings 1902 to 1910. GERMANY:-Patent Journal 1881 to date: Patent Office indices 1877 to 1910. HUNGARY:-*Patent Journal 1907 to

to date. ITALY:—*Patent Journal 1867, 1877, 1886, 1907 to date: Specification and Drawings 1874 to 1896.

JAPAN:--Patent & Trade Journal 1897 to date.

NEW ZEALAND:-Gazette 1891 to date. PORTUGAL:-Patent Journal 1902 to

RUSSIA:-Specification and Drawings 1897 to 1898, 1900 to 1911. SPAIN:—*Patent Journal 1886 to

date. SWEDEN:-Specification and Draw-

ings 1885 to date. SWITZERLAND: --*Patent List 1896 to

date. VICTORIA:—Specification and Draw-

ings 1854 to 1891.

Text Books, Magazines and Hand Books on Patents, Designs and Trademarks in different languages.

*Have no descriptions or drawings.

A MERCURY AIR PUMP.

 $\mathbf{A}_{\mathrm{que}}^{\mathrm{N}}$ air pump of interesting and unitubes, and eventually discharged by que construction, using mercury the air pump. for exhausting the air from incandescent lamps of the Osram type, and the like, may be noted in the accompanying drawings, as constructed by Dr. U. V. Reden, of Franzburg, Germany. It consists of a tube about one-half filled with mercury, this tube comprising at its two ends S-shaped tubes, connected on both sides to widened portions and then through rubber hose and a T-shaped tube, with a water jet air pump.

Rubber, owing to its porosity, would not be very convenient, so this is ad vantageously replaced by a connection consisting of ground glass joints in the shape of perforated glass balls fitting tightly in the carefullypolished hemispherical cap.

At the right of illustration a turbine is seen actuating, by means of a cord, a pulley which imparts to the tube an oscillatory motion through the intermediary of clockwork and cranks.

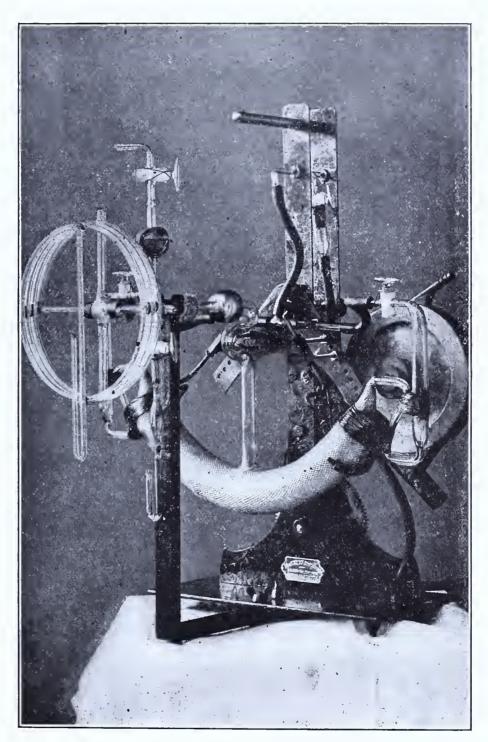


Fig. 1.—Mercury Air Pump.

o turn round a pivot.

When a preliminary vacuum of a fraction of an inch of mercury is obtained in the bulb by means of the air pump, there is imparted to the apparatus a permanent oscillatory motion. The mercury remaining in the S-shaped tubes then works as a pressure valve, and prevents the air in the widened portions from returning from the vessel, it being expelled by the mercury through the S-shaped

The connection between the recti- The glass joints lead to the spiral linear tube and the bulb to be ex- vacuum gauge, and then another joint hausted is a rubber tube, allowing provides a connection with the bulb the whole of the apparatus to be free to be exhausted. A short arm manometer is arranged below the latter.

> The vacuum gauge seen in the illustration consists of a spiral glass tube attached to crossed tubes. The left hand tube encloses a small amount of mercury and the crossed tubes are mounted on a standard ground glass joint, the conical angle of which is accurately given. As the spiral is turned round on the axis of the joint, the small amount of mercury is made to enter the spiral, there compressing

the exhausted air, until after a number of revolutions it enters the U-shaped

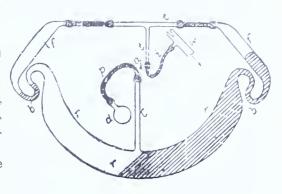


FIG. 2.—DETAILS OF CONSTRUCTION.

It is claimed that this device presents a number of advantages over other manometers, the most important being its higher precision in gauging maximum vacua. In fact the amount of mercury in the usual apparatus is so considerable that the tension of the extremely exhausted air no longer suffices to overcome its friction. The mercury enclosed in the graduated capillary tube therefore moves only by jerks, and obviously impairs the accuracy of readings. It also has the advantage of being capable of being connected without any rubber hose or lead tubes to a high vacuum pump of any design. Its low weight and small space requirements are likewise bound to prove advantageous.

Shipping a Locomotive Intact.

To pick up a railroad locomotive by a loading crane, to lower it intact into the hold of a steamer, to carry it several thousand miles and to unload it in the same way and run it ashore from a railroad barge under its own steam, is the latest feat. The engine weighed 65 tons, and had been bought for a road on the Hawaiian Islands. It was run up to the side of the steamer and the fires were drawn. With heavy slings the monster and its tender were lifted on board and deposited in the hold. On arriving at its destination, although a heavy sea was running, the locomotive was swung over the side and deposited on the rails of a waiting railroad barge. The latter was run to its slip ashore, the engineer and firemangetting up steam under way. Locomotives have already been sent to the farthest corners of the world, but it has always been in a disassembled condition, with the separate parts securely packed. This is the first time one was ever transported intact.

To Prevent Sunstrokes.

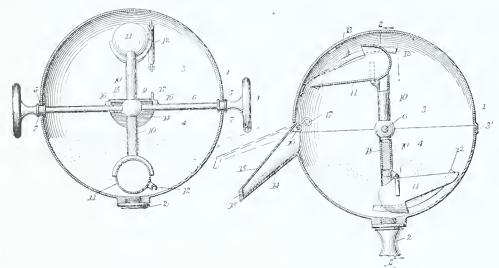
The coming of this year's warm weather brought with it a real novelty in sunstroke prevention. At the big hatters in New York they fitted straw headgear with a little thermometer. It was fastened to the sweatband inside the hat, so that at a glance at the degree of heatregistered next to your head warned you whether or not you should get in out of the sun. When it mounted to 90 degrees or above, it was time to look for a cool spot.

CLEVER NEW PATENTS.

SUGAR BOWL.—TOBACCO STRIPPER.—BAIT HOLDER.

Sugar Bowl.

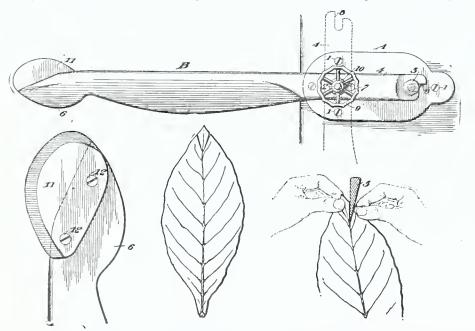
A sugar bowl that does not necessitate the use of a spoon, and that is thus adapted for use in hotels, restaurants and similar places where the guests help themselves, has been patented by Joseph Matas, of Paterson, N. J. The bowl has mechanism which enables the contents to be easily discharged, and as shown by the vertical sections in the illustration, it is composed of two hemispherical sections, one flanged to fit over the other, and the meeting edges recessed for bearings to receive rotatable spindles 6, entering the bowl and united in a hollow ball 9. From this ball projects a pair of perpendicular arms, rigid with the ball so as to be revolved therewith. The arms are tubular and carry scoops 11, which take up the sugar and deliver it through an opening in the side of the bowl. On the same side of each of the scoops 11 is a curved guide 12, bent in the form of the arc of a circle and adapted to engage a spring 13 on the upper section in the path of the guide 12. An opening is formed in the lower section and leads into a spout, open at the top and closed by a pivoted lid. This lid has a weighted end which closes the end



of the spout. A bent piece of wire 17 is secured to the inner end of the lid in the path of the guide, so that just before the scoop reaches the spout, the guide 12 thereof will press down the wire and uncover the spout, allowing the sugar in the scoop to fall out into the cup or dish held to receive it. The flange of the upper section is cut away at the spout to enable the two sections to fit closely, thus excluding flies, etc. A weight 18 is slidably mounted in the arms, to keep them upright. The spring 13 engages the curved guides 12 just before they engage the wire projection 17, to open the lid 15. The spring offers resistance to the movement of the scoop 11 when the guide 12 passes the spring, and affords an indication to the hand of the person using the bowl, as to the position which the scoops occupy. Otherwise the wheel 8 might be turned so that the lid would be opened and the sugar dropped through the spout when no receptacle was ready for it. As the scoops are rotated, the weight 18 will always slide from the arm 10 of the upper scoop through the hollow ball 9 into the arm supporting the lower scoop. The weight will always be in the lowest possible place, thus holding the scoops in such position that the upper one always engages the spring.

Tobacco Stripper.

Tobacco is one of the most flourishing of our minor crops. No longer is it necessary to import the weed either for wrappers or fillers. With the growth of the industry has come a demand for the use of machinery, and a device for stripping the stems from the leaves, invented by William F. Ganzer, of Oshkosh, Wisc. will be found of great service. The stripper B is composed



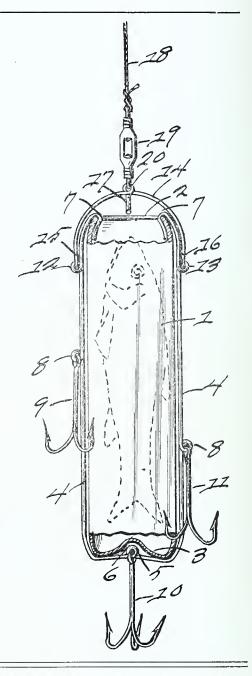
of a shank, (to which the number 4 is given in the accompanying cut,) an intermediate part 5, and a knife support 6. The shank has two slots, one elongated to receive a threaded pin and one open to embrace a headed stud,

said stud and pin being secured on the bracket A which supports the stripper. The open slot divides the end of the shank into two jaws, the lower being shorter than the upper, and just long enough to clear the stud when the stripper arm is stretched as far out as it will go. This admits the headed stud into the open slot, after which the arm is pushed back the length of the closed slot, and the hand nut θ is turned on the threads of the pin, forcing the washer 10 against the shank and locking the arm in a horizontal position. The longer jaw at the end of the shank stops the headed stud and limits the upward movement of the arm.

The cutter 11 has a sharp, rounded upper edge of steel, and is screwed to the knife support, so that it can be detached for sharpening. The intermediate part 5 tapers in cross section and has a dull, curved lower edge, which serves to strip the stem from the leaf. In operation, the arm is slid inward as far as the slots will permit, and the hand wheel is turned to the right to hold the arm steady. A V-shaped notch is then cut at the apex of the leaves by the cutter 11, as illustrated in the center figure, and the stem is stripped by taking a number of leaves between the thumb and finger, and drawing them first forward and then backward and upward against the intermediate parts, thus splitting them in twain. A repetition of this movement strips the stem clean at the opposite side. Thus there is no waste of material or time, and the device permits one person to do the work of several.

Bait Holder.

Followers of Isaak Walton will be interested in a device for preserving minnows as bait so the latter, while attracting the fish, will be safe from its attack. It consists of a transparent holder in which the bait are confined and protected, the holder being filled with water so as to keep the bait alive and fresh, and so arranged that the latter cannot escape. A glass cylinder, open at the top and closed at the bottom, has a wire frame fastened at the lower end and firmly hooked into its open end, and a wire bail is linked into eyes on the frame so that the bail may be swung to either side of the mouth of the holder. Another wire is soldered crosswise of the bail and extends on opposite sides thereof, and together with the bail forms an effective obstruction to prevent the escape of the minnow from the holder. When the device is used in trolling or still fishing, the mouth of the holder is obstructed by the guard and the bail. When a minnow is to be inserted, the bail and guard are moved to one side of the mouth so as to leave this open. The instant the holder is suspended from the line, the bail and guard automatically obstruct the mouth, although permitting the entry of water at all times. The holder may be carried some distance out of the water without injury to the bait, as it holds enough water to keep the latter alive. The device is the invention of Chester E. Henning, assignor of one-half interest to A. J. Baldwin, both of Benton Ridge, Ohio.



PATENTS

Send Your Business Direct to Washington Saves Time and Insures Better Service.

Trade Marks,
Copyrights
and
Designs.

My office is close to the U. S. Patent Office. Personal attention given—OVER THIRTY YEARS PRACTICE. Book "How to Obtain Patents," etc., sent free. Patents procured through E. G. Siggers receive special notice, without charge, in the—

INVENTIVE AGE

Illustrated Monthly—Twenty-third Year.
Terms, \$1.00 a Year.

E. G. SIGGERS,

918 F STREET, N. W., WASHINGTON, D. C.

LATEST COURT DECISIONS IN PAT-ENT, COPYRIGHT AND TRADE-MARK CAUSES.

GREENWALD BROS., Inc., v. ENOCHS et al.

(Circuit Court of Appeals, Third Circuit. Nov. 28, 1910. IS3 F. R. p. 583.)

1. PATENTS-VALIDITY AND INFRINGEMENT -Skirt.

The Feuchtwanger patent, No. 662,714, for a skirt consisting of three parts, the lower part being of nonelastic material, the hip portion of a material having some elasticity, and the waist-band of still more elastic material, discloses patentable novelty and invention, and the garment is one of utility; also held infringed.

2. PATENTS—INVENTION.

In a long developed art, in which there is a meager sphere for invention, a marked improvement in product evidences corresponding originality in making such pro-

NEW JERSEY PATENT CO. et al. v. WEINBERG.

9, 1910. 183 F. R. p. 588.)

1. PATENTS—INFRINGEMENT—VIOLATION OF 1. PATENTS — ANTICIPATION—BURDEN AND CONTRACT RESTRICTIONS.

It is within the right of the owner of a patent for a phonograph record, or the exclusive licensee thereunder under authority from the owner, to sell such records only under contracts which prohibit their sale by auy purchaser for less than a stated price, notice of which restriction is printed on the cartons in which the records are sold and kept when not in actual use, and a violation of such restriction constitutes an infringement of the patent, which may be enjoined. 2. Patents-Infringement-Violation of

RESTRICTIONS ON SALE OF PATENTED ARTICLE—PERSONS LIABLE.

The exclusive licensee under a patent for a phonograph record sold such records only under contracts by which the pur-chaser agreed to observe the conditions printed on each carton containing a record which provided that "this record is sold * * * upon the condition that it shall not be sold * * * or offered for sale by the be sold * * * or offered for sale by the original or any subsequent purchaser at less than a price named). Upon any breach of said condition the liceuse to use and yend this record, implied from such sale, immediately terminates." Held, that an unlicensed dealer with notice of the restriction who purchased such records at secondhand from the public after they had been used, and resold the same at less than the pre-scribed price, was an infringer of the patent.

A. Y. McDONALD & MORRISON MFG. CO. v. H. MUELLER MFG. CO.

(Circuit Court of Appeals, Eighth Circuit. Dec. 9, 1910. 183 F. R. p. 972.)

1. TRADE-MARKS AND TRADE-NAMES-UN-FAIR COMPETITION—BURDEN OF PROOF.

To make a case of unfair competition, the burden is upon a complainant corporation to establish by clear and satisfactory proof that the use by another corporation of its own initials on its goods is with fraudulent intent to mislead purchasers.

2. TRADE - MARKS AND TRADE - NAMES-UNFAIR COMPETITION—TEST.

The test of unfair competition by the imitation of labels or marks is, not whether a difference can be recognized when the goods are placed side by side, but whether, when they are not side by side, an ordinarily prudent purchaser would be liable to purchase the one believing that he was purchasing the other.

3. TRADE - MARKS AND TRADE - NAMES-MARKS OR NAMES SUBJECTS OF OWNER-SHIP-FORM OF ARTICLE.

One manufacturer cannot create a monopoly to be enjoyed by him by adopting a shape or form of product, and particularly when such product is one of general use: and this is emphasized when such product

is made from material which is fashioned for its better use, and with economy for use, according to long-time usage.

4. TRADE-MARKS AND TRADE-NAMES-UN-FAIR COMPETITION—INJUNCTION

A manufacturer of plumbers' goods held chargeable with unfair competition in purposely imitating in appearance the goods of complainant, a competitor, and properly eu-joined: but the injunction held too broad, and so modified as to permit the defendant to use the common forms of the devices, although like complainants, provided it marked the same so as to unmistakably indicate their origin.

RUBBER TIRE WHEEL CO. et al. v.

GOODYEAR TIRE & RUBBER CO. (Circuit Court of Appeals, Sixth Circuit,

Dec 15, 1910. 183 F. R. p. 978)

PATENTS-DECREE ADJUDGING PATENT IN-VALID-RIGHTS OF DEFENDANT.

 ${\bf A}$ decree in an infringement suit adjudging the patent void for lack of patentable invention leaves the defendant with the same rights as though the patent had never been issued, including the right to make and sell the whole or any part of the pat-ented device without interference with its business by the complainant by harassing its customers with suits or threats of suit for infringement, in which right it is entitled to protection by injunction.

TORREY et al. v. HANCOCK.

(Circuit Court, E. D. Pennsylvania. Dec. (Circuit Court of Appeals, Eighth Circuit. Nov. 26, 1910. 184 F. R. p. 61.)

> MEASURE OF PROOF TO CARRY BACK DATE OF INVENTION.

Where an auticipatory device is shown to have been in use prior to the application for a patent, the burden rests upon the patentee to carry the date of his invention back to a time antedating such use by satisfactory and convincing proof, and oral testimony, given many years after the event, unsupported by physical exhibits, and which is in itself somewhat contradictory, is not suffi-

2. PATENTS—EVIDENCE AS TO ORIGINALITY AND PRIORITY—PRESUMPTION OF PAT-ENTEE'S KNOWLEDGE OF PRIOR ART.

A patentee is conclusively presumed to have been entirely familiar with all the prior art as disclosed either by patents or prior devices.

3. PATENTS - EVIDENCE OF INVENTION-EXTENSIVE USE.

General public acceptance and use of a patented device is only a fact to be considered with all the other facts in the case on the issue of patentable novelty, and is most appropriately resorted to where that issue is in grave doubt.

4. Patents - Suit for Improvement -PRIOR DECISIONS.

While the rule of comity, and the desirability of uniformity of decision, must incline a court to follow the decision of another court of co-ordinate jurisdiction sustaining a patent, such rule is not imperative, and does not apply where there is a substantial difference in the proofs.

5. PATENTS—INVENTION—CHANGES IN PRO-PORTION OR DEGREE.

Changes in degree, proportion, or symmetry in a machine, where it does the same thing in the same way and by substantially the same means, although it may produce better results, does not amount to patentable invention.

6. PATENTS - INVENTION - ROTARY DISK PLOWS.

The Hardy patent, No. 556,972, for a rotary disk plow, which covers a combination of elements, all of which except the inclination out of the vertical plane of the plowing disk were present in prior patented com-binations, is void for lack of patentable novelty and invention in view of the fact that such inclination was suggested in prior patents, and that plows had previously been actually adjusted, at first by temporary wedges, and later by a casting supplied by the manufacturer and quite extensively used, to give the disk such inclination.

FOSTER HOSE SUPPORTER CO. v. TAYLOR.

(Circuit Court of Appeals, Second Circuit. Jan. 9, 1911. 184 F. R. p. 71.)

PATENTS-LICENSES-FORFEITURE-RELIEF AGAINST IN EQUITY.

A provision in a license to manufacture under a patent that. in case of default in the

terminated by a notice, is valid and effective in so far that the licensor may forfelt the license without resert to a court of equity, but does not preclude a court of equity from relieving against an attempted forfeiture at suit of the licensee, and, under general equitable principles, it should do so where the default is merely in delay in payment of royalties, and their payment with interest will fully compensate the licensor.

WILLIAM F. JOBBINS, Inc., v. KENDALL MFG. CO.

(Circuit Court, D. Rhode Island, Jan. 18, 1911. 184 F. R. p. 463.)

PATENTS - LICENSES - CONSTRUCTION OF CONTRACT.

Plaintiff and defendant entered into a contract, reciting that plaintiff was the owner of patents for a process and ma_ chinery for producing commercially refined (nitro) glycerine from waste soap lyes and that defendant was a producer of such waste soaplyes. The contract granted to defendant the right to use such machinery and process during the life of the patents, on payment of royalties, and further provided that if defendant should, before the expiration of the patents, "discontinue the use of the said first party's within-named process for any other," it should pay to plaintiff a stipulated sum in lieu of future royalties. Defendant discontined the use of plaintiff's process, and adopted a new process for extracting the glycerine from the original fats before saponification, and in consequence did not produce any waste soaplyes. Held, that the subject matter of the contract was the treatment of waste soap lyes, and that, as it contained no provision requiring defendant to continue the production of such lyes, it did not by the substitution of the process, which did away with such production, discontinue the use of plaintiff's process for treatment of such lyes for any other, within the meaning of the contract, and was not liable under such

H. MUELLER MFG. CO. v. GLAUBER. (Circuit Court of Appeals, Seventh Circuit. February 2, 1910. Petitiou for Rehearing Withdrawn December 27, 1910, 184, F. R. p. 609.)

1. Patents—Construction-Limitation of CLAIMS.

A patentee cannot read the specification into a claim for the purpose of changing it, or to escape anticipation or establish infringement, and much less can he read into it a feature not shown in either the specification or drawings.

2. Patents—Anticipation by Prior Use— BURDEN AND DEGREE OF PROOF.

Prior use, in order to show anticipation of a patent, must be proved beyond a reasonable doubt, and it cannot be said to have been proved with such degree of certainty by oral testimony, where it may be reasonably deduced from all the record that other and conclusive evidence might have been obtained, and no effort was made to produce it nor to excuse the omission.

3. Patents-Validity and Invention-Coupling JOINT FOR PIPES.

The Glauber patent, No. 782,552, for the unitary elbow-shaped coupling-joint for pipes in combination with coupling connections for both ends thereof, was not anticipated, and, in view of the presumption arising from the grant and the utility of the device, must be held to disclose patentable novelty, although of a low order of invention. Also, held infringed.

ASBESTOS SHINGLES, SLATE & SHEATHING CO. et al. v. H. W. JOHNS-MANVILLE CO.

(Circuit Court, S. D. New York. Dec. 3, 1910, 184 F. R. p. 620.)

1. PATENTS-ANTICIPATION-PRIOR PATENTS.

A patent must do more than to make untested suggestions or pregnant surmises to constitute an anticipation of a later patent.

2. PATENTS—ANTICIPATION-PRIOR PATENT.

Where the disclosures of a process patent in regard to the machines and method employed are so uncertain that they can only be spelled out tentatively, such patentis not an anticipation of a later one for a definitely described process.

payment of royalties, the contract may be 3. PATENTS - REISSUES - CONCLUSIVINESS OF DECISION OF PATENT UFFICE.

> The runty of the Patent Cilieen in spplication for a reissue that the incline of patentce to include certain features of his invention was due to accident, madversence. or mistake cannot be reviewed by the courts on the facts.

4. PATENTS - REISSUES - IDENTITY OF IN-VENTION-PROCESS AND PRODUCT.

A patent for the product of a process is for the same invention as the process itself, and a reissue of a process patent, containing a new claim for the product, is not a departure from the original invention.

5. PATENTS - VALIDITY AND INFRINGEMENT-PROCESS OF MAKING ARTIFICIAL STONE PLATES.

The Hatschek reissue patent, No. 12 594 (original No. 769,078), for a process of making artificial stone plates and the product ot such process, which consists of mixing together, in a great bulk of water, hydrau ic cement and asbestos or other fibrous material, agitating the same for some time until the cement takes on a peculiar condition, termed in the patent "colloidal," then pouring the mixture into the receiving wat of a cardboard machine, by means of which plates of the required thickness are formed which are then pressed and cured, was not anticipated, discloses the process with sufficient completeness, and the reissue is valid. Also, held infringed by the pro-cess practiced and the product made by the use of the machine of the Sillman patent, No. 829,770.

ELECTRIC PROTECTION CO. v. AMERI-CAN BANK PROTECTION CO.

AMERICAN BANK PROTECTION CO. v.

ELECTRIC PROTECTION CO. et al.

(Circuit Court of Appeals, Eighth Circuit. November 18, 1910. On Petition for Rehearing, Jan. 30, 1911. 184 F. R. p. 916.)

1. PATENTS-INVENTION-BURGLAR ALARM.

The Coleman reissue patent, No. 11626 (original No. 570,906), for an electric burglar alarm, claims 18 and 20, are void for lack of invention in view of the prior art.

2. Patents — Infringement — Burglar ALARM.

The Robinson & Green patent, No. 708,496, for improvements in electric turglar alarms, relating particularly to an alarm gong to be placed outside of the safe or vault to be protected, in combination with a shield inclosing the same, which if removed or attempted to be removed from its position will cause an alarm to be sounded, is for a narrow invention, and entitled only to a corresponding range of equivalents. Craims 1, 2, 3, 7, 8, and 10 construed in connection with the drawings and specification, and held not invinced. and held not infringed.

3. Patents-Combination Patents-Construc-

In patents for a combination if the patentee specifies any element as entering into a combination, either directly by the language of the claim or by such a reference to the descriptive part of the specification as carries such element into the claim, he makes such element material to the combination, and the court cannot declare it to be immaterial.

4. PATENTS—INFRINGEMENT—PATENTS FOR

In determining the question of infringement of a patent for a combination it is necessary to look at the mode of operation or the way the device works, as well as at the result, and the means by which that result is attained.

5. PATENTS - INFRINGEMENT - APPEAL-INTER-LOCUTORY DECREE.

In a suit in equity for infringement of different patents t inventions, such as may be joined in one suit, where the bill is sustained as to some of the patents, but dismissed as to others by an interlocutory decree, no appeal lies from that part of the decree which dismisses the bill as to some of the patents until after the final decree.

6. PATENTS -SUIT FOR INFRINGEMENT-APPEAL -Decisions Reviewable.

Where defendants are jointly sued for infringement, and the bill is dismissed as to some by an interlocutory decree which retains it as to others for a final decree and accounting, such decree is not final and no appeal lies from that part dismissing the bill as to some of the defendants.

MECHANICAL INVENTIONS AND DESIGNS

Patents for which have been procured through the Patent Soliciting Office of E. G. Siggers, Patent Lawyer, Washington, D. C.

George F. Cross, San Antonio, Tex. Wall Mold.—The invention covered by this patent relates to a molding means for producing concrete walls. and it has for its objects to provide a molding apparatus, which when not in use can be compactly arranged so as to occupy but little space, which can be readily assembled and set up, can be arranged in various forms to correspond to the desired arrangement and character of the walls to be built, can be easily elevated as the building of the wall progresses, and is constructed of elements that can be put together by an ordinary workman without the use of tools.

Jefferson D. Pace, Winnfield, La. Oil Burner. - The object of this invention is to provide a burner, adapted to be utilized for burning crude oil in connection with stoves, fire places or the like, and it comprises a combustion chamber formed by an openended perforated pipe having a solid bottom, a centrally arranged opening in the bottom, a tee arranged within the combustion chamber, burner plugs arranged in each end of the tee, an oil supply pipe having its discharge end arranged directly below the opening in the bottom of the combustion chamber, and a nipple arranged within the said opening for connecting and clamping the tee and supply pipe against the inner and outer surfaces of the combustion chamber.

Rufus L. Hicks, Columbia, Mo. Puzzle.—The object of the invention of this patent is to provide a puzzle consisting of variously shaped wire elements, detachably linked together, and so designed that one of the parts can be engaged or disengaged through a series of steps, which, if not understood, are extremely difficult to work out. The puzzle comprises a piece of wire bent into the general form of a ring with a U-shaped re-entrant arm having an eye with a finger passing through the same, a ring surrounding the arm, and a keeper engaging the arm for retaining the ring thereon, the keeper being movable to disengage the ring from the arm and adapted to pass through the eye and over the finger to disengage the ring from the keeper.

Harry B. Vanosdall and Charles E. Enck, Ashland, Ohio. Collapsible Toilet Seat.—This invention relates to closet seats, and has for its principal object to provide a structure, which can be readily applied to closet seats, bowls, or the like, now in general use, the seat being formed of soft leather, and normally held in flat position by a detachably collapsible frame, thereby permitting the frame to be disengaged whenever it is desirous of washing the seat, or rolling it into a convenient bundle for carrying the same. The device comflexible seat having arms secured in loops at the front and rear thereof, and side rods separate from the seat for detachably connecting the arms for supporting the said seat in extended position.

John Humphrey, Henderson, Ky. Spoke Socket.—In vehicle wheels of the present construction, the spoketenons invariably become loosened through different causes, and consequently rattle, causing much annoyance; and also become broken, necessitating a new spoke. The device covered by this patent is intended for

use in assembling new wheels in which spoke-tenons are not employed; though it can be used in repairing wheels of the present construction which employ spoke-tenons. device is constructed of metal, and consists of a spoke-receiving socket having felly-engaging means for preventing the lateral movement of the spoke, and a felly-engaging clip having its ends bent to form outstanding ears which are adapted to engage on either side of the felly and to be secured thereto by a common fastening means, the said clip being interlocked with the spoke socket to prevent the longitudinal movement of the spoke along the felly.

Harry Page, Galena, Kan., inventor: R. H. Love, Memphis, Tenn., assignee. Wrench.—One of the objects of this invention is to provide a quick-acting wrench, in which the movable jaw may be readily adjusted to fit any desired nut or other object with which it is to be engaged, without the necessity of turning an adjusting screw for this purpose, means being provided whereby the movable jaw shall be wedged in place and held with great rigidity. The wrench is constructed with a handle bar provided at its outer end with a fixed jaw, a movable jaw surrounding the handle bar and having an inclined inner face, a collar movable on the handle bar and having a wedge projecting therefrom and adapted to engage with the inclined face of the movable jaw, and a means for locking the wedge in

William McD Megget, Greenville, Miss., inventor; Emmett Thomas, assignee, same place. Faucet for Soda Fountains.—This invention relates to a type of faucets adapted to be used in connection with the soda pipe of a soda water fountain for discharging the soda into the glass adjacent the bottom thereof, thereby thoroughly mixing the soda and syrup, and avoiding the use of a spoon which is so commonly employed for this purpose. The device comprises acoupling, a rotatable tube mounted thereon and provided with a flared mouth piece at the outer end, and a hollow stem arranged within the tube and connected so as to rotate therewith, but adapted to be shifted longitudinally thereof, one end of the stem being provided with a conical shaped spreader which is arranged within the flared mouth piece and adapted to be moved into and out of engagement therewith by the rotation of said tube.

George J. Forrey, Carlisle, Pa., inventor: Samuel L. Diven, assignee, same place. Nut Lock.—This invention has for its object to provide a nut lock designed for use on rail joints, machines and various other strucsubject to vibration and adapted to be applied to an ordinary bolt and nut without necessitating any alteration in the construction thereof, and capable of securely locking both the bolt and nut against rotary movement. It comprises a washer having a tapered opening, and provided at its outer face with a circular recess, and a circular interiorly threaded locking member fitted in the circular recess of the washer, and provided on its inner face with a conical extension fitted in the tapered opening of the washer, said extension being split longitudinally and adapted to be forced into engagement with a bolt by the said washer when a nut is screwed inwardly against the locking member.

Lloyd R. Reed, Urbana, Ohio, inventor; M. N. Johnson, same place, assignee. Fountain Brush.—This invention aims to provide a fountain brush adapted for either blacking shoes or stoves, shaving or stenciling

purposes, and has for its object to provide a brush of this character, adapted to hold a quantity of liquid and capable of being readily adjusted for use, and of being used without liability of soiling the hands. It is provided with means for automatically feeding the liquid to the brush while the same is in use, and for cutting off the flow of polish when the brush is not in use. The brush includes a reservoir forming a handle, a tubular casing extending from the handle and provided with a feed tube, an extensible brush head movably mounted within the easing and adapted to project therefrom, and a cap fitted on the casing over the brush head and provided with a valve to close the end of the feed tube, and having an extended stem projecting into the feed tube so as to form a cleaning rod for the same.

Allie E Goldman, Galena, Kansas. Shield for Pneumatic Tires.—This invention is especially designed for use on automobiles, and one object is to provide a means for protecting pneumatic or other tires from puncture and wear, this object being accomplished by providing a simple shoe, adapted to be readily applied to or detached from any well known form of tire, and having means for fastening the same to the wheel and at the same time permitting the resilient action of the tire. The device comprises a yielding tire located on a felloe, a protector shoe located over the tire, and devices fastened, respectively, to the shoe and felloe for securing the shoe to the felloe, one of the devices having a longitudinal slot, and the other having a neck passing through and movable longitudinally in the slot and having a head extending across the neck and wider than the slot.

William H. F. Raifsnyder, Oil City, Pa., inventor; John L. Bromley, W. J. Corse, and D. K. Johnson, assignees, of Oil City, Pa. Fly Wheel.—The obiect of this invention is to provide means whereby a pulley, gear wheel, fly wheel, or the like, can be placed upon and adjusted along a shaft without difficulty and without the use of sledges, drifts, or the like, and may be securely clamped to the shaft in any desired position. It comprises a wheel formed of a hub, spokes and a rim, a shaft-receiving opening in the hub, a slot extending from the opening through the periphery of the hub between adjacent spokes, a clamping block located in the slot, and means for securing the block to the hub.

George W. Hedrick, Dayton, Va. Vehicle Curtain.—The inventor's aim is to improve the construction of carriage tops, more especially the construction and arrangement of the curtains, and to provide an efficient arrangement adapted to be readily applied to various carriages, such as surreys, buggies, etc., and capable of affording complete protection to the occupant. The curtains are arranged on spring rollers located near the top of the vehicle so that they will be out of the way when not in use, and may be quickly drawn down or closed and secured when desired. A front or storm curtain is also mounted on a spring roller and is adapted to be arranged either at the extreme front of a surrey or other carriage, or at an intermediate point, so as to shield the rear seat and expose the front seat when desired.

William A. Mooney, inventor; James H. Fraser, assignee, Richmond, Va. Door Latch and Stop.—This invention relates to door latches, and has for one of its objects to provide an efficient device, designed for use on screen doors, house doors, gates and the like where an ordinary fastener can be employed, so as to permit a

door to be opened and closed without lifting the latch, and when the door is shut, capable of tightly holding the same in such position until the door is opened with the required force. The latch is constructed with a pivoted hook arranged horizontally and having an inclined outer edge and provided with a V-shaped recess forming inner and outer oppositely inclined edges, a keeper provided with a horizontally projecting roller engaging with each of the inclined edges of the recess, and a spring for actuating the hook for maintaining the same in engagement with the roller.

Thomas M. McIntosh, Fairfield, Iowa. Rope Making Machine.—This is a very simple and efficient device for making rope, and is designed for the use of farmers and other persons requiring halter ropes, tethering ropos, and the like, so as to enable a rope of any size or height to be easily and cheaply manufactured. The machine is constructed to be mounted on a fence rail, or the side of a wagon body, without the use of fastening devices, in a proper position to permit the gearing to be conveniently operated. The machine comprises a easing provided with spaced depending sides and open at the bottom and ends to straddle and engage a support, central and side strand twisting hooks mounted on the casing, and operating mechanism for rotating the hooks.

Charles W. Bickel, Evansville, Ind. Typewriter Desk.-The object of this invention is to provide a typewriter desk with an improved supporting means for the typewriting machine, the parts being so arranged as to provide a flat top desk when the typewriter is not in use. The desk is constructed with an opening in the top and a compartment thereunder, and is combined with a swinging typewriter support consisting of two plates arranged at an angle to each other, a hinge for pivotally mounting the sup-port at the rear of the opening, and a cross bar at the front of the opening, one of the plates serving as a closure for the opening when the support is in closed position, while the other plate provides a base for the typewriter. A spring bolt is carried by the typewriter plate and is adapted to engage the cross bar to lock the parts in their open position.

James C. Parker, Woodston, Kan. Float Indicator for Funnels.—This invention has for its principal object to provide an attachment adapted for use in connection with any funnel, whereby a positive indication will be given of the filling of the bottle or other vessel to which the funnel is applied. The attachment can be easily adjusted so as to be applied to vessels having necks or openings of various sizes, and to announce the reaching of any desired level by the liquid within the reservoir or vessel being filled. The indicator comprises a float having a stem rising therefrom and adapted to pass through the spout of a funnel, and a support arranged within the funnel and frictionally engaging the stem and adapted to bear against the walls of the funnel.

Louis Smith, Brooklyn, N. Y. Drill Press Table.—This invention has for one of its objects to provide a table or work holder, which can be adjusted so as to be disposed at right angles to the drill-carrying spindle or stock of the drill press, whereby absolute precision in the drilling of parts is rendered possible. A bracket or spider is provided to be clamped on the column or standard of the press, and it carries the plate of the table. Adjusting means are arranged intermediate the bracket and plate for accurately leveling the latter.



Advertisements inserted in this column for 10 cents a line (about 7 words) each insertion. Every new subscriber sending \$1.00 to THE INVENTIVE AGE will be entitled to the AGE one year and to five liues three times PREE. Additional lines or insertions at regular rates.

For Sale-Patent No. 998,233, dated July 18, 1911. A new game hoard. Very interesting. Will sell outright or on a royalty. Address, Ray S. Crocker, Wellington, Ohio.

FOR SALE — U. S. Patent No. 995,536, dated June 20, 1911. Automatic Syrup Skimmer. Cash sale: Interested parties address, Andrew J. Hardin, Quincy, Fla.

GR SALE-Outright U. S. Patent No. 984.003. "Aseptic Twin" Clinical Thermometer Case, Splendid practical device for physicians and nurses. Address, Joseph C. Jenkins, Lititz, Pa.

For Sale—Patent No. 995,819. Aeroplane Automatic Control. Does not interfere with manual control. May be locked leaving full manual control or used in unison. Extra weight about twenty pounds, Address, James L. Walker, Kamela, Oregon.

ROR SALE—Patent No. 996,045, dated June 27, 1911, Engine. Will sell outright or on royalty. Guaranteed to save one-third fuel with twenty per cent added power and speed. Address, G. W. Baker. Box 83, Brown Station. New York.

FOR SALE—Patent No. 950,459, dated Feb. 22, 1910. This device can be used for coal shafts and also for elevators. No matter how many times the rope breaks it never fails. No time wasted. As soon as the rope is fixed you can start and hoist again. Address, John Skaba, Box 89, Braidwood, Ill.

FOR SALE—Patent No. 996,312, dated June 27, 1911. Insulator. Is particularly adapted to withstand sleet and storm. Does not need any short wire to tie same, and because of lying close to timber cannot easily be broken by stones thrown by boys. Will hold two wires as well as one and with the same ease in handling. Because of its safe construction is specially adapted for use in cities. For full particulars address, T. D. Childress. Ansted, W. Va. dec

POR SALE—Patent No. 998,471, dated July 18, 1911. Shoe Fastener. For further information address, John M. Dahlgren, Bethune, S. C.

For Sale—Patent No. 997,932. dated July 11, 1911. Rail Joint. Will mean the saving of thousands of dollars daily. Will insure smooth riding and prevent the pounding of wheels over joints. Eliminates all holts and fish plates. Address, Arthur Munchausen, Box 103, Independence, La.

For Sale—Two Patents No. 995.563. dated June 20, 1911, and No. 976,289, dated Sep. 22, 1910. Address, A. M. Porter, R. R. No. 3. Box 36, Amsterdam, Mo. nov

For Sale-U. S. Patent No. 995.633, dated June 20, 1911. Logging Bunk. Will sell outright or shop rights. For particulars write, Joseph N. Peterson, Ellison Bay. Wisc.

FOR SALE-U. S. Patent No. 995,974, dated June 20, 1911. Improved vacuum dust tank; cash sale. Interested parties, address, J. C. Lewis, Hotel De Soto, Mansfield, Ohio.

FOR SALE—Patent No. 958.461, dated May 17, 1910. Detachable Wagon Skate. Can change carriage or wagon into sleigh in a few minutes. Further particulars address. Max Aubertel, R. F. D. No. 1, Box 364 A, Edgewater, Colo.

For Sale-Patent No. 885,557. An improved holt-holder for preventing the rotation of holts while the nuts are being removed or tightened up. An indispensable tool for the blacksmith and farmer. Address, C. T. Tarver, Hollywood, Ark.

FOR SALE — Patent No. 992,862. Onion Harvester. Machine is propelled by a gasoline engine. Cost of building is small. Easy to operate. The cleaned onions are delivered in the crates. Address, T. De Young, Jr. South Holland, Illinois.

For Sale — Aquaplane Patent No. 989,604, dated April 18, 1911. Will propel hoats 60 miles per hour. Address, S. M. Howard, Gettysburg, South Dakota.

For Sale—Patent No. 986,295. Vertical Upsetting Press. Would sell outright, or dispose of same on a royalty hasis. For full particulars, write Justus Johnson, 413 Goepp Street, Bethlehem, Pa. oct

For Sale—Patent No. 993,879, dated May 30, 1911. Shop rights for sale. This economy hay rack can be mounted upon the holsters of a wagon and removed by one man. Can be put in out of the weather in a space one and one-half feet wide by sixteen feet long. For particulars address, William II. Rodebaugh, Cedarville, Illinois.

OR SALE — Canadian Patent No. 132,646, dated April 25, 1911; U. S. Patent No. 974,571, dated Nov. 1, 1910. Attachment for wheelbarrows. All reasonable offers will have my personal attention. Address, Wm. C. Johnson, Fence, Wisc.

FOR SALE or on royalty—Reissue Patent No. 13,258. A self-rotating projectile for smooth bore and rifle guns. The most complete invention of the age for sportsmen or heavy guns, Will he demonstrated to interested parties at Appalachian Exposition, Knoxville, Tenn. Sep. 2, to Oct. 1, 1911. Address, H. H. Hendrix, R. D. No, 2, Powell Station, Tenn. nov

FOR SALE—To highest bidder. Oscillating Water Motor. For further particulars write. August Anderson, Ponderay, Idaho.

POR SALE-U. S. Patent, No. 989,068, dated April 11, 1911. Wind Mill. Will sell for cash to the highest hidder. Address, Alfred J. Shirley. Rothsay, Minn.

For Sale—Patent No. 989,012. Portable Out Door Sleeping Apartment. Screened Bed and Tent Combined. Insect and rain proof. California reserved for one year. Address, Mrs. Jennie Hoyt, Santa Paula, Cal.

FOR SALE—Patent No. 986,704. Device for attaching holdback straps to vehicle thills. Will unhitch themselves when you forget to do it. Correspond with Dr. T. E. Gallup. Santa Clara, California.

FOR SALE or exchange — Patent on combined track brace and nut lock. Will exchange good real estate or automobile. Any reasonable offer considered. Address. C. Maunders, Jackson, Minn.

WANTED.

WANTED—A company or firm to manufacture rotary engine, patent No. 995,076. U. S. A. on shares or royalty. Address, T. G. McGonigle, Lambton Mills, Ont. Canada. dec

Wanted—To exchange information with persons having patents on railroad appliances. I have sleeping cars, ventilating appliances, anti-rail spreads, loose rail indicators, iceless refrigerators, and oval window. Give detailed information in these lines only. Address, Joseph A. Shires, 1921 Sherman Street, Denver, Colo. oct

WANTED—To correspond with manufacturers regarding the manufacture and placing on the market of two good patents having practically an unlimited field for their operation. Address, P. O. Box 30, Falling Spring, W. Va. nov

ANTED a Company in the U. S. to manufacture my saw-fitting device, patent No. 972,789, dated Oct, 10, 1910. Also a company in Canada to manufacture same device. Canadian Patent No. 124,345, dated March 8, 1910. I will sell either or both of said patents. Address, C. R. Pierce, Rainier, Washington.

ANTED—Two or three persons with some capital to correspond with a patent owner of a new meritorious article. Practice on model very satisfactory. Will not sell patent but will join in company. Address, F. D. F. Box 28, Waterbury, Conn.

WANTED—Not for sale but want a company to manufacture my manure loader on royalty, Patent No. 918.095. Address, Lars C. Peterson, Osage City, Kansas.

Wanted-Agency propositions. What have you to sell? Address. Ernest Morse. Luverne, Minn.

Wanted-Partners for foreign patents on whip socket lock, for share in patents. U. S. patent allowed. Key remains in lock when whip is loose. One-half turn of key locks whip, When whip is locked key is removed. The harder the pull the tighter the grip. For particulars address, Clarence S. Skinner, Payne, Ohio. oct

ANTED—Four (4) men to loan me \$100 each, for four years, at 6 per cent to help me to push four (4) good paying toy inventions, for which I will return to each of them their loan, and I will give also to each loaner 10 per cent of all the income from sale of said patent inventions in whatever way I may dispose of said patents. Here is your chance. Who will accept, Address, E. W. Barton, No. 35 Carroll St., Binghamton, N. Y.

Electrical Review and Western Electrician

Published weekly from the center of the industry, this publication is in the best possible geographical position to gather and present the most important and interesting news of the entire electrical industry.

SUBSCRIPTION PRICE

U. S. \$3.00 per year, Canada \$4,00 per year, Foreign Countries \$6.00 per year. Sample Copy Free

It is seen and read by practically every buyer of electrical material in this country and abroad. Advertising rates on application.

ELECTRICAL REVIEW PUBLISHING CO., 507 Marquette Bldg., CHICAGO.

A NEW BOOK FOR INVENTORS

Patents and How to Make Money out of Them,

By W. B. HUTCHINSON.

This is the only hook published, giving a detailed and full account, from the author's actual experience, of just what steps are necessary from the time the invention is conceived, to the time it is sold, with a clear and concise resume of the law and practice, legally and commercially, of trade-marks and copyrights. It also tells accurately How and What to invent. How to sell Inventions, Place them on the Market, Interest Capital in them, and to successfully Promote a Stock Company. It also contains an index of forms worth double the price of the book to any one interested.

ELEGANTLY CLOTH BOUND.

GOLD STAMPED. \$1.00 Postpaid.

Sent with one subscription to AGE for \$1.50 Or will sell separately.

Address— The Inventive Age Pub. Co., 918 F St., N. W. WASHINGTON, D. C.

cess— The Inventive Ide Dub C

HALF-TONES ZINC ETCHINGS ... DESIGNS...

LANMAN

ENGRAVING

COMPANY

PROCESS ENGRAVERS, ILLUS-TRATORS, DESIGNERS. TRADE-MARK DRAWINGS

EXECUTED.
"Quality and Speed"

POST BUILDING

Fourteenth St., and Pennsylvania Ave. N. W.
Phone, Main 673

A VALUABLE OFFER TO INVENTORS.

A Complete Outfit of Printed Matter for \$20.

- 1. A zinc etching of your invention for use in printing letterheads, envelopes, circulars, etc.
 - 2. One thousand printed circulars.
- 3. Five hundred envelopes with your name and address printed in the corner.
- 4. Five hundred letterheads with a cut of your invention, and your name and address neatly printed thereon.
- 5. A list of manufacturers in the special line of your invention.
- 6. A form letter to be followed in conducting your correspondence with manufacturers and others.
 - 7. Four dozen deeds useful in selling state, county, town or shoprights.

 Address:—

INVENTIVE AGE PUBLISHING CO. Dept. O. WASHINGTON, D. C.

ATTENTION INVENTORS!

LISTS OF MANUFACTURERS FURNISHED.

We have increased our facilities for furnishing lists of manufacturers, and now cover every line of industry. The names are obtained from well known directories.

Our charge for each list is one dollar.

In ordering, please state specifically the class of manufacturers desired. Address: Inventive Age Pub. Co., Dept. M. 918 F. St., Washington, D. C.

Every subscriber when sending \$1.00 is entitled to a free advertisement, not exceeding five lines, of any patent in which he may be interested. The ad, will be inserted three times.

0	the property of the second sec
The state of the s	THE INVENTIVE AGE PUBLISHING CO., Washington, D. C.
20.2.00	I herewith enclose \$1.00 for one year's subscription to
STATE OF THE PARTY OF	"THE INVENTIVE AGE."
	I also enclose ad. for insertion in the (Patents for Sale*) (Want*) column of your paper.
September 1	NAME
ž	77 0

Please indicate in which column you want the ad, inserted,

N. B.—Remit in the way most convenient.

STATE.....

""Inventive age

Published monthly by

THE INVENTIVE AGE PUBLISHING CO.,

National Union Building, 918 F Street, N. W., WASHINGTON, D. C.

THE INVENTIVE AGE is sent, postage prepaid, to any address in the United States, Canada, Mexico, Hawaii, and Porto Rico, for ONE DOLLAR a year; to any other country, postage prepaid. One Dollar and Twenty-Five Cents.

Correspondence with inventors, mechanics, patentees, and manufacturers, is invited. The columns of this journal are open for the discussion such subjects as are of general interest to its

Technical matter is particularly desired. We want practical information from practical men. THE INVENTIVE AGE is independent.

Special facilities for furnishing cuts of any patented device together with descriptive article. Business specials 10 cents a line each insertion: 7 words to the line. No advertisement less than 25

Address all communications to

THE INVENTIVE AGE PUBLISHING COMPANY, WASHINGTON, D. C.

Entered at the Post-office as 2nd class matter.

WASHINGTON, D. C., OCTOBER 1, 1911.

COMPULSORY LICENSES.

The opinion is growing year by year that the most important and necessary amendment required to be made to the patent statutes is that incorporating a provision for compu'sory licenses, similar to that prevailing in many countries. It is not generally known, but it is a fact that a patent is the one real monopoly which the courts of this country are compelled to respect and maintain. Attempts have been made to defeat certain patents on the ground that the holders thereof were exercising the patent rights in a way to conflict with the Sherman antitrust law, and in different parts of the country, courts have been called upon to pass their judgment upon the right of certain manufacturers under the protection for patents, to restrain trade. One of the most important cases was that relating to the pneumatic stacker for threshing machines, decided several years ago. A company in Indiana has been engaged in the manufacture of pneumatic stackers since 1891, and by the purchase of patents as well as by purchasing competing companies, it has succeeded in building up a monopoly, which permits it to exact from farmers a charge of \$250 for a pneumatic stacker, which costs less than \$50 to manufacture. In the suit for infringement brought hy the Indiana company against another concern, it was sought to defeat the patents sued upon, on the ground that the contract of the Indiana company with its licensees was in violation of the Sherman law. All the manufacturers of threshing machines in the United States are licensees of the Indiana company. As a result their monopoly of pneumatic stackers is clear. The court held, however, that patented articles are never articles of trade or commerce within the Sherman law, and, therefore, refused to accept the plea of the defendant that the acts of the Indiana company constituted a restraint of

strain infringement of its patents.

Because of this decision and others which need not he specifically referred to, it is well settled that a patent is a monopoly outside of the Sherman anti-trust law, and that the manufacturer who makes and sells a patented article, may conduct the sale of the article in any manner, or impose any conditions on the sale, that he may see fit, and the courts will protect him in his rights. It is in view of this fact, and hecause of the rising tide of protest against trusts and monopolies. that attention is being directed to some amendment of the patent law so as to control this matter, and it will be interesting in this connection to consider the provisions of the patent law of Canada and England on this subject.

Under the Canadian law if a patent

be not worked sufficiently for the reasonable requirements of the public to be fulfilled, the Commissioner has power, on the application of a third party, and after hearing the patentee, to grant a license to such third party to work the invention on such royalties and terms and with such restrictions, as the Commissioner of Patents shall deem just. This does not mean that the Commissioner of Patents will give a license to some one to manufacture under the patent without due compensation. but on the contrary the rights of the patentee will be protected in such a way that he may be sure of receiving a proper royalty for the use of his patented invention. As a result of this provision in the Canadian law, the patentee cannot tie up his patent, or lay it away on the shelf for an indefinite period, but is required to supply the demands of the public for the invention. That this is a reasonable provision is made clear when one carefully considers why a patent is given. The theory on which the Government awards a patent to the patentee is that the patentee is going to benefit the community by his invention and hy the establishment of a new industry in the country. If a patentee uses his patented invention so as not to foster, but to impede, the growth of new industries in the country, it may well he argued that sufficient ground is given for either revoking the patent, or laying it open for the public to use on such terms as will conserve the interests of the patentee. In most foreign countries, either the compulsory working of the patented invention or the issuance of compulsory licenses has heen grafted on the patent laws. The United States is a notable exception.

The English law would seem to furnish a model for use in this country. The present law of compulsory license may he summarized as follows: Any person interested may present a petition to the Board of Trade alleging that the reasonable requirements of the public with respect to the patented invention have not been satisfied, and praying for the grant of a compulsory license, or, in the alternative, the revocation of the patent. The phrase "Any person interested" trade such as to deprive it of the right denotes a person whose commercial

to appear in a court of equity to re- interests are prejudiced by the pat- the grant of patents which will call for entee's default.

If the good offices of the Board of Trade fail to bring about a settlement between the parties, and the petitioner seems to have a fair cause of complaint, the petition is referred to the High Court for adjudication. The court may make an order for the issuance of a compulsory license or the revocation of the patent, according to the requirements of the case. To comply with the terms of the International Convention, it is stipulated that no order for revocation should be made hefore the expiration of three years from the date of the patent, or if the patentee gives satisfactory reasons for his default. The reasonable requirements of the public are deemed not to have been satisfied, if by reason of the default of the patentee to work his invention to an adequate extent, any existing trade or industry, or the establishment of any new trade or industry, in Great Britain or Ireland, is unfairly prejudiced, or the demand for the patented article is not reasonably met. There have been instances where the provisions of the compulsory license act have been successfully invoked in England, hut the moral effect of the presence of these provisions in the law has made it impossible for such conditions to exist in England, with respect to trusts and monopolies built up under patent rights, as are common in this country.

We do not favor the plan which prevails in most foreign countries, of requiring the patentee to work his invention within a specified time under pain of forfeiture of the patent. It hears heavily upon the inventor, who in spite of his efforts to get his invention taken up and worked in the country, fails to comply with the statutory requirements, either through lack of enterprise on the part of the commercial community. or through want of sufficient means to establish the industry himself. Hence, for the poor inventor, compulsory working too often spells compulsory confiscation of the patent. With compulsory license the case is different. The rights of the patentee would not he materially abridged if the compulsory license section were engrafted in the U.S. Patent Statute, and it would no doubt protect the public against monopolies such as are established and fostered hy the patent laws. We have stated one instance of a monopoly built up under the grant of patents, and we might cite a score of such cases. The United Shoe Machinery Co., is another instance of an odious monopoly preving on shoe manufacturers through the grant of patent rights. Inventors get no benefit from the operation of such companies, and a law which would restrict their field of operations would not hurt the inventor, but would simply protect the public and prevent patents from falling into bad repute. Because of the operations of certain companies working under the protection of patents, the latter are caused to bear heavily upon certain industries and upon the consuming public, and as a result there is a growing feeling of resentment against

action by the National Legislature. In the issue of the INVENTIVE AGE for June, we referred to a bill introduced by Representative Peters of Massachusetts, to amend the patent statutes in certain particulars so as to protect the public against the unfair methods of the United Shoe Machinery Company. There is an awakening all along the line, and Congress will have to deal with this question radically in order to cure the evil which admittedly exists. If something is not done, the complaint against the grant of patents will increase to such an extent as to endanger the whole patent system. It would be better, in our judgment, to amend the law immediately, by incorporating a compulsory license provision, than to wait until the tide of discontent and dissatisfaction increases to such an extent as to bring about even more radical amendments, which might materially affect the granting of patents. The grant of a patent is a necessary and reasonable act of the government in return for the valuable service given hy the inventor, but there is no reason why that act should be made the hasis of the foundation of a monopoly, to oppress other manufacturers in the same line and to increase the cost of living to the general public.

TWO QUESTIONS USUALLY REGARDED AS ONE.

It seems difficult for inventors to comprehend the distinction hetween the patentability of an invention and the question of infringement. Nine inventors out of ten, when they receive from their attorneys favorable reports as to patentability, assume the report means that the invention is absolutely clear of any prior patents. They apparently think that the attorney, for the sum of \$5, should not only decide the question of patentability, but the question of infringement as well. The same percentage of inventors believe that when the Patent Office issues a patent, the grant of the patent is a guarantee that the invention covered thereby is not an infringement of any prior patent. Let it he understood once for all that the Patent Office never considers the question of infringement of prior patents when it issues a patent to an inventor. If they did, a great many of the patents that are issued would never be granted, for there are patents issued every week, which are clear infringements of prior patents. To pass upon the question of infringement is not a small matter. It involves the study of the claims of all prior unexpired patents with a view to determining if any of such claims can be read upon the invention under investigation. The Patent Office is in arrears now with its work and they consider simply the question of patentability. How many years they would fall behind with their work if they included the question of infringement, is not hard to guess.

An infringement investigation may consume any where from a week to a month, everything depending upon the nature of the invention being investigated, and the patience and the skill

of the attorney who is conducting the investigation. On the other hand, the question of patentability simply deals with a comparison between the invention submitted for examination and the inventions disclosed in prior patents. A mere glance at many patents is sufficient to show to a skilled examiner that there is no comparison between the invention being investigated and said patents. An examiner may go through the drawings of several hundred patents in the course of a few hours, and may carry his investigation throughout a number of different classes in less than a day, and at the end of his search be reasonably satisfied that the invention which is under consideration contains patentable novelty. Indeed, so skilled do examiners become that a mere study of the application for patent under examination enables them to determine that the invention has patentable novelty, and it is sometimes only the work of an hour or so to find patents to anticipate some of the claims presented in the application.

When the question of infringement is under consideration, the claims of all the patents in analogous arts must be read carefully after the specifications and drawings of the patents are thoroughly understood. In some instances, it may take several hours to understand a single patent sufficiently to determine what its claims mean, and there may be dozens of complex pateuts which must be subjected to the same careful scrutiny. One can readily see why an infringement investigation takes time and could not be comprehended by the Patent Office in its work, nor by an attorney when an invention is submitted for preliminary examination.

When a preliminary examination is made, the attorney pursues the same course that is followed by the Examiner of the Patent Office. He examines the drawing of the patent, and if a glance shows there is nothing in the drawing which conflicts with the invention under examination, the drawing is laid aside; but if there is any doubt or any obscurity in the drawing he consults the specification. The time consumed in studying the drawing of each patent is usually not over a few minutes, and many times hardly a minute. The eye can take in at a glance all the features disclosed in the drawing, and an experienced examiner can tell at once whether or not there is anything in the drawing that should be investigated more thoroughly. Preliminary examinations vary in length from an hour or two to nearly a day, and some times over a day, depending wholly upon the nature of the invention, the number of classes to be examined, and the care exercised by the attorney in making the examination. There are some attorneys here in Washington whose flaming advertisements appear in the newspapers whose men are known to make from eight to ten examinations a day. One can see how impossible it is to make correct searches in that period when it is mentioned that the Patent Office opens at nine and closes at four-thirty. The average length of a preliminary examination is two and a half hours. The work, however, is not finished until the copies of patents have been ordered, and studied and a report formulated.

In brief, the difference between an examination as to patentability and an examination as to infringement is the difference between examining the drawing and specification of a patent, without regard to what the patentee claims, and studying the claims of the patents in connection with both the drawing and specification. Any young man of good education who can read drawings and has a knowledge of mechanical devices can learn to become an examiner inside of a few months, though he may not be efficient in his work, but it would take years to make him competent to study the claims of patents and give an opinion on the question of infringement.

Metallized Paper.

Metallized paper is being manufactured by a German process as a substitute for tinfoil. Ordinary paper is treated with a mixture of finely powdered metal and resin and then subjected to friction, with the result that it becomes flexible, brilliant, and as impermeable as sheets of tinfoil. Wax or an alcohol solution of gum lac may be used instead of resin. In making the tinfoil paper. either pure tin in a powdered state may be used, or a mixture of aluminum, powder and tin. The final polish is done by calendering, which, hitherto always done with heated rollers, is accomplished in this process by means of refrigerated rollers.

The Sixth Sense.

Few people are aware that there is recognized now by all physiologists a well defined sixth sense. It is known as the sense of equilibrium, and has its seat in the semicircular canals of the inner ear, which have for a long time puzzled scientists as much as the appendix, as it was known that they had nothing to do with hearing or the proper working of the auricular organ, and consequently were looked upon as superfluous. These canals consist of three semicircular tubes, almost at right angles to one another and full of a clear liquid. They enable a person to tell what position he is in, no matter whether he is blind or paralyzed. By some peculiar process not well understood. but which probably has something to do with the varying pressure of the liquid in the canals on nerve fibers while the body assumes different positions, they warn us when we are about to lose our equilibrium and give us the consciousness of being in any position assumed.

A peculiar thing in connection with this, and one that had a great deal to do with the final discovery of the use of the organs, is the following divers occasions, steeplejacks and workmen on high buildings found that they had lost their nerve and that they could no longer persuade themselves to go very far from the ground. On trying to work at their old trades, they would have a dizzy feeling and would not be able to remain upright at great heights for any length of time. On examination by physicians, it was determined that their semicircular canals were diseased and that consequently their sense of equilibrium was

The Secret of the Firefly.

The glow worm and the firefly have recently been made the subject of government investigation. The bureau of standards has been studying the light emitted by these luminous creatures, and also by the deep sea shrimp, the jelly fish and the angle fish, and has found out many interesting things about the subject. One discovery is that, reckoning the cost upon the basis of energy expended in production, the light is about 200 times as cheap as the electric incandescent. The light of the firefly, in fact, is the ideal light, if it could be made white instead of yellow-green. It has been found that the insectuses 96.5 per cent of its lamp energy for light, and does it naturally. An ordinary carbon glow lampuses of its total given-out energy, only fortythree hundredths of one percent for light giving purposes. To illustrate this better: If a consumer of electricity pays a bill of \$200 for lights, he has actually used for lighting purposes only 86 cents worth of electricity. Experiments with other artificial illuminants show that where the luminous efficiency of the ordinary glowlampgave forty-three hundredths of one per cent, the tungsten gave one and three-tenths per cent, and the mercury are three and eight-tenths per cent. This proves that the tungsten is more than three times as economical. To express this in other figures, for a bill of \$200 a citizen would receive in light, for the ordinary incandescent, 86 cents worth: for the tungsten, \$2.60 worth; for the mercury are, \$7.60 worth. But if lightning bugs were available, or if their secret were known and applicable to human methods, for that \$200, \$193 worth of light would be given, and instead of one room that would be lighted by the incandescents 225 could be illuminated.

This shows the practical importance of the experiments. The object was to find out not only the exact lightgiving efficiency of the insect, but the amount of heat incidentally produced, this being an accurate measure of the energy utilized: and also to determine the range of colors in the rays emitted by the bug. The method first adopted was to imprison a number of fireflies in a small cage with a white wall at the back, from which their light would be reflected into the slit. But this did not work, as it was found that the insects when in captivity lost their desire to flash. The only way to manage the thing, it was found, was to hold one or two of the bugs at a time in the fingers in front of the slit. The best specimens flash every three seconds until tired, when fresh ones were substituted. Taking the fireflies as they came, from two to six hours were required to obtain one good photograph.

Special plates were employed, sensitive to all colors of an ordinary rainbow. And in order to catch them all, the plate holder was not set parallel with the plane of the lens, as in an ordinary camera, but at a long slant, as the focus is different for each color. However, it was proved that the light contains practically no

colors at all except the yellow green. This means that it is practically devoid of heat rays-these being tre rays which are bunched at the red end of the sunlight spectrum. It is, in fact, light without heat. Treditivestigators used an instrument of almost inconceivable delicacy, by which the heat of even a star ray can be determined. But when it was turned upon the firefly, it showed that there was no heat whatever. The energy employed to make the light seemed to be ϵx pended entirely in illumination. In order to make a light equal in brilliancy to that of this small insect. by any means at present within human knowledge, there must be a temperature of at least 2,000 degrees F. But in the firefly, we have combustion without heat, a cold light without waste.

It was once thought that the light of the firefly was due to the presence in the tissues of phosphorus, whence the term phosphorescence. But nothing could be wider of the mark. The fact is that certain cells in the rear end of the bug's abdomen secrete a peculiar chemic substance which, when oxygen comes into contact with it, gives out light. Among the "photogenic" cells, there is noticed, run many of the little breathing pipes which penetrate the bodies of insects and supply them with air. It is by this means, scientists now think, that the bug obtains the oxygen which enables it to turn on its flash. The flashes are emitted at will by an impulse transmitted from the brain through the nervous system, so that the whole insect is a small lighting

In the tropics is found another insect, of the beetle class, which emits a much more trilliant light than any bug known in this country. It has two eye like lamps, one on each side just behind the head, through which shines a yellow-green light. The horny coat of the creature is transparent in those parts which cover the luminous spots. On the abdomen is a third spot, which shines when the firefly is flying. These beautiful beetles are frequently used as hair ornaments, and are sometimes fastened to women's gowns, serving as living jewels. In the West Indies they are imprisoned in paper lanterns, to illuminate dwellings. or more often when people go out at night. Another method adopted is to attach one of them to each foot when walking in the darkness, in order that they may serve as a guide to the path. One can read by the light a few of them give when they are suitably caged.

The most remarkable of all luminous insects are the lantern flies of Europe, whose huge heads are hollow and are illuminated somewhat after the manner of a jack 'o'lanterns. They are also known as flying glowworms, but this term is misapplied. The glowworm, properly speaking, is the wingless female of a species of firefly very common in Europe. It is blackish in color, crawls about in the grass, and emits a light which is occasionally interrupted. Science is still in doubt, not only as to the origin of the light of these insects, but as to the reason why they carry lamps. Some think that it is a warning or danger signal to bats and other bug eating animals that fly by night. When crushed, the firefly has a disagreeable odor, and

doubtless a bad taste.

CLASSIFIED list of Patents issued during the month appears in each issue of the INVENTIVE AGE. This keeps inventors and manufacturers posted in the art in which they are most interested. - We will send, postpaid, to any address, printed copies of any U. S. patent, with specifications and drawings, upon receipt of 10 cents per copy.—Please give correct data in ordering.—Address.

THE INVENTIVE AGE PUBLISHING CO., 918 F St., N. W., Washington, D. C.

LIST OF PATENTS

Issued July 25, 1911.

MECHANICAL PATENTS. (Continued from September Number.) Knitting machine openwork attachment ... Labeling machine. F. O. Woodland Lamp. Acceylene. II. H. West Lamp. Acceylene. II. B. Drought Lamp controller, Automatif. B. Drought Lamp controller, Automatif. H. Enoise et al. Lamp. H. Lange. Feetrie. R. H. Enoise et al. Lamp. Incandescent oil. J. Wauthox Lamp. Miner's. J. J. Jonszta Lamp post. J. C. C. Larkins Lamp post. J. C. C. Larkins Lamp post. J. J. Jonszta Lamp post. J. C. C. Larkins Lamp wick operating device. O. E. Miller Lamps of automobiles. Adjusting mechanism for. R. H. Sphar et al. Lantern Electric. T. M. Jonks et al. Lantern Electric. T. M. Jonks et al. Lantern Electric. T. M. Jonks et al. Lantern Electric. T. M. Jonks et al. Latte attachment. J. Schuller Lawns of automobiles. Adjusting mechanism for. R. H. Sphar et al. Latte attachment. J. Schuller Lawns of the Company of

Power, Generating and regulating the gencration of ... G. M. S. Tait et al. Power transmission mechanism.

Printing machine, Yarn ... T. J. Kelly Printing mechanism ... H. C. Gammeter Printing press ... O. M. Howard Printing press impression adjustment ...

Projectile (2 pats) ... L. J. McNair Propeller ... S. Heath Propeller ... S. Heath Propelling device. Boat ... W. Arnold Pulley, Change speed ... A. Aichele Pump. Centrilugai ... J. L. Coker, Jr. Pump system ... W. K. Read Pumch or borer for leather and similar substances ... P. S. Souders Radiography, Automatic stereoscopic ... E. W. Kelley Rail coupling and chair, Combined ... L. E. W. Kelley Rail coupling and chair, Combined ... J. Ellis Rail fastener. Track ... F. W. Hild Rail stop. G. W. Rink Railway bumping post ... N. P. Phillips Rail joint support ... R. M. Griffith Rail stop. G. W. Rink Railway switch ... P. P. Catalano Kallway switch ... P. P. Catalano Railway switch ... W. W. Rhame et al. Resilient wheel for vehicles ... C. A. Chertemps Resilient wheel for vehicles ... C. Gapwell Rim construction, Demonntable ... P. E. Doolittle Rim, Demonntable ... P. E. Doolittle Rim, Demonntable ... P. E. Doolittle Rim, Demonntable ... P. F. Trippe Rock doosening and impregnating device ... S. Mahnrin Rock drilling machine ... P. Lange Rock loosening and impregnating device ... Sexing and suppregnating device ... Sexing machine ... P. Lange Rock loosening and impregnating device ... Sexing machine ... P. Sheehan, et al. Sash, Metall window ... J. T. Leonard Sash, Metallic window ... J. Roley ... Scaled and fertilizer distributer ... A. Butler Sexing machine presser foot litting mechanism ... J. Leonard Sexing machine presser fo Sewing machine, Overseaming, J. Heggie Sewing machine presser foot lifting mechanism. J. Heggie Sewing machine, Two needle L. Onderdonk Shade holder. H. C. Hawks Shade holder. H. C. Hawks Shaft sinking, Safety device for.

T. Bryant Sheep shears. W. S. Beehtol Sheet controlling device G. F. Read Shelf driev. O. S. Sleeper Shock absorber, Pneumatic. G. Taraglio Shock reducer. R. L. Herman et al. Shoc. P. H. Doherty Shoe stretcher. P. E. Bassett Shoes, Manufacturing. V. Landry Skate, Shoc. W. R. Dorsey Skirt, Rain. L. F. Suddick Sled. Automobile. V. Grover Sliding gate. V. C. Maartin Smoke, gases, &c., Apparatus for collecting. J. W. Lang Smike preventing device. J. P. Doyle Snap. H. Y. Armstrong Soda fountain cooler. W. B. Wood et al. Solids and liquids, Apparatus for combining comminuted. F. A. Faller Spark cill. A. J. Gifford et al. Sparking device. W. Falwell Speed meter for rotative movements. E. O. G. Becker Sphygmomanometer. R. E. Mercer Spigod wrench. G. W. Dewees Spinning, (wisting and doubling machinery. (Reissne). S. Z. de Ferranti Sphygmomanometer. R. E. Mercer Spigot wrench. G. W. Hewees Spinning, twisting and doubling machinery. (Reissne) S. Z. de Ferranti Spool holder. A. Benze et al. Spraying machine, Plant. L. Willis Spring wheel. J. B. Dunlap Spring wheel. W. T. Urie Spring wheel. W. T. Urie Sprinkler system. Automatic.

Steam generator. S. H. Shepherd Steam trap. L. P. Strong Steering gear. A. H. Graef Stencil machine character punch.

Stereoscope plate changer. E. W. Kelly Stitch machine, Impression or imitation.

J. B. Hadaway Stitches, Machine for making impression or imitation. J. B. Hadaway Stoneworking machine. J. J. Padbury

Window.
Window, Storm and screen.
B. F. Anfderheide
Wire working machine.
E. J. McIlvried
Wrapper or sheet feeding machine.
N. Y. Armstrong Wrappers from strips, Mechanism for entting. H. V. Armstrong
Wrench J. P. Kahle
Wrench C. Harten

Issued August 1, 1911.

MECHANICAL PATENTS.

F St., N. W., Washington, D. C.
AeroplaneH. L., A. E., and H. O. Short Air brake apparatusJ. H. Wallace
Air or gas compressorC. C. Harmon AirshipG. H. Sherwood Animal trap
AeroplaneH. L., A. E., and H. O. Short Air brake apparatusJ. H. Wallace Air or gas compressorC. C. Harmon AirshipG. H. Sherwood Animal trapM. Jaeger Animal trapW. D. Dye- ApronI. M. Ruth Arm and hand, ArtificialW. T. Carnes Antomobile heaterF. W. Dilks et al. Automobile motors and other mechanism, Device for locating the defectively op-
Antomobile heater. F. W. Dilks et al. Automobile motors and other mechanism,
Device for locating the detectively op- erating parts inb. B. Gaylor Automobile wheelA. W. Wilt
Antomobile wind shieldA. B. Thomas Antomobiles, Dust protector and packing device forJ. K. Smith
Automobiles, Transmission gearing for C. W. Collins. Rack support
Baggage rack W.S. Hamm Balloon form J. Schutte
Barrels, Device for removing char from.
Barrette A. Scharer Base ball (2 pats) B. F. Shibe
Basket, Metallie. A. Manser Beam of flanged iron. A. E. Roach Bearing, Roller. B. S. Lawson
Beet digger. F. Lotter Beet topper F. Lotter Binder, Letters. A. W. Collins
Book cover rubbing and cleaning machine.
Antomobile heater. F. W. Dilks et al. Automobile motors and other mechanism, Device for locating the defectively op- erating parts in L. B. Gaylor Automobile wheel A. W. Wilt Antomobile wind shield A. B. Thomas Antomobiles, Dust protector and packing device for J. K. Smith Automobiles, Transmission gearing for C. W. Collins. Back support L. Street Baggage rack W. S. Hamm lialloon form J. Schutte Barrel heading and hoop-driving machine. W. A. Bishop Barrels, Device for removing char from. G. Clnthe Barrette A. Scharer Base ball (2 pats) B. F. Shibe Basket, Metallic A. Manser Beam of flanged iron A. E. Roach Bearing, Roller B. S. Lawson Beet digger F. Lotter Binder, Letters A. W. Collins Bolt-rolling machine, A. L. Drexler et al. Bookbinding S. Williams Boot holder A. Lundgren
Boots and shoes, Machine for the mann- facture of
Bookbinding
Brake shoe with insertD. Rawstrom Brake shoe with reinforced back
Brake shoe with reinforced back
Broom guard
Bulding frame or sash, Metal. Bung. S. L. McLaurin Bung. M. E. B. Williams
Butcher's implement
Calcium perborate, Making stable
Calculating machines, Clntch for power drivenA. Knistrom Can top, MilkF. Brightman Cap and hat shape retainer.B. J. Levin Car body and underframe construction
Car construction H. M. Pflager Car coupling, Logging M. E. Spears Car door, Grain R. E. Null Car extension step M. A. O. Jones Car journal box and dust guard therefor. Car platforms, Means for operating K. E. O. Hockinson Car vaiser and safety brake C. K. Young Car stake pocket C. Flink Car underframe A. Becker
Car door, Grain. S. T. Wilson Car door, Grain. R. E. Null Car extension step. M. A. O. Jones
Car journal box and dust guard therefor.
Car vaiser and safety brake. C. K. Young
Car underframe
Cars, Means for operating extension steps and trap doors on railway
Carbureter W. C. Westaway Card dealing machine, Playing
Car stake pocket. Car underframe. A. Becker Cars, Friction draft gear for railway. H. M. Pflager Cars, Means for operating extension steps and trap doors on railway. C. F. Nye et al Carbureter. W. C. Westaway Card dealing machine, Playing. B. L. Baker Card dealing machine, Playing. Gard dealing machine, Playing. B. L. Baker Cartridge magazine. P. Mauser Cartridges, Device for introducing energizing material into the charge of blasting. G. M. Peters et al Case for vials, &c. E. B. Chapman Castings and the like, Apparatus for cleaning. C. W. Caroling C. W. Caroling.
ing material into the charge of blasting
Castings and the like, Apparatus for cleaning
ing
Cellulose-ester composition C. Ellis Cellulose esters in definite forms, Preparing L. Lederer Cement producing apparatus C. Ellis Cement to tape, &c., Machine for applying J. H. La Bate Centrifugal separators, Lifter for liner- plates of A. T. Salenius Chalk line reel W. H. Fnerst Chalk
Centrifugal separators, Lifter for liner- plates of A. T. Salenius
Chalk line reel
Clothes line reel. J. H. Millett Coffee mill. E. M. Walker
Chalk line reel. W. H. Fnerst Chuck. O. Otto Cloth clamp for textile machinery. J. H. Millett Coffee mill. E. M. Walker Coil, Multiple unit. E. C. Wilcox Coin receptacle. W. H. Woolums Collar stnffing machine (2 pats). J. C. Collett Collars, Making. T. Klein Combination wrench. A. S. Reed Compound engine. H. Bolthoff
Collars, Making. T. Klein Combination wrench. A. S. Reed
Concrete, Coating
Concrete mixers, Cnt-off forC. E. Shero Concrete piles, FormingR. J. Beall, Jr.
Concrete. &c., Waterproofing-coating composition for

Condenser (2 pats)J. M. Thompson Condiment for Welsh rabbitsD. R. Greene Constant temperature bathT. B. Freas
Conveyor E. C. L. Van Wert Conveyor for grading and the like J. E. Mnrdock
Cooker, ElectricI. Yancey et al Cooker, press, and percolator, Combined J. B. Livingston
Corect Pathing L. A. Kallstrom
Cotton gatherer W. A. Patterson Cotton picking machine T. J. Gray
Cover, Cooking vessel. G. O. A. Lillegord Cnff Laner, Jr.
Curtain pole holderJ. and H. Schmitz Cutting and stamping dieM. Falk Dental applianceR. C. Kestler
Dental crowns. Device for the mannfacture of
Display deviceII. W. Knautz Door checkJ. Schmidt Door check and closerJ. C. Regan Door check and closer. Combined.
Condenser (2 pats). J. M. Thompson Condiment for Welsh rabbits. D. R. Greene Constant temperature bath. T. B. Freas Conveyor. E. C. L. Van Wert Conveyor for grading and the like. J. E. Mnrdock Cooker, Electric. L. Yancey et al Cooker, press, and percolator, Combined. J. B. Livingston Cooking vessel attachment. L. A. Kallstrom Corset, Bathing. D. McCullough Cotton gatherer. W. A. Patterson Cotton picking machine. T. J. Gray Counter operating mechanism. C. C. Abbott Cover, Cooking vessel. G. O. A. Lillegord Cnff. L. Laner, Jr. Cnrtain pole holder. J. and H. Schmitz Cutting and stamping die. M. Falk Dental appliance. R. C. Kestler Dental crowns. Device for the mannfacture of. J. M. Gilmore Display canister. L. P. Christophersen Display device. H. W. Knautz Door check and closer, Combined. A. F. Bardwell Door, Sheet metal. J. F. Weitzel Drainage gate, Automatic. M. D. Gnrett Drill or other impact mechanism G. H. Condict
Drill or other impact mechanism
Dye and making same. Polyazo
Dye. Brown basic azo
Dyeing machineC. Frohlich Dyestuff of the anthracene series, Vat F. Singer
Earthy materials, TreatingC. Ellis Easel attachment for display boxes, cards, pictures, &cT. H. De Lacy Egg baker
Egg prescrying compound
Electric furnace
Electrical distribution system
Electric iron
Electricity meters, Appliance for preventing fraud in connection with. G. Berardi Electrode, Electric furnace
Driving mechanism. Friction. A. R. Le Moon Dye and making same. Polyazo. R. Hangwitz Dye, Azo. G. Kallischer Dye Brown basic azo. H. Gorke Dyeing coloring matter, Vat. C. Frohlich Dyestuff of the anthracene series, Vat. Earthy materials, Treating. Earthy materials, Treating. C. Erlis Easel attachment for display boxes, cards, pictures, &c. T. H. De Lacy Egg baker. G. Radtke Egg prescrving compound. E. Petersen et al Electric controller. L. A. De Mayo Electric furnace. H. Pauling Electric furnace for treating gasses. H. Pauling Electric furnace for treating gasses. Electrical distribution system. J. L. Woodbridge Electricity meters, Appliance for preventing fraud in connection with. G. Berardi Electrolyte and method of depositing Electrolyte for depositing zinc. E. F. Kern Electrolyte for depositing zinc. E. F. Kern Emergency brake. G. J. Anderson Envelop. Envelop. R. T. Weiler Equalizer. Draw bar. C. E. Estes Exhibit device (2 pats). G. Bryant et al Feeder regulation, Helsaling. Feeder regulation, E. S. Lozuaway Facing machine. G. Bryant et al Feeder regulating transformer. G. Bryant et al Feeder regulating transformer. G. Bryant et al Feeder regulating transformer. G. S. Neeley Fence machine, Wire. D. R. Knapp et al Feeder regulating transformer. G. S. Neeley Fence machine, Wire. D. R. Knapp et al Feeder regulating transformer. G. S. Neeley Fence machine, Wire. D. R. Knapp et al Feeder regulating transformer. G. S. Neeley Fence machine, Wire. D. R. Knapp et al Feeder regulating transformer. G. S. Neeley Fence machine, Wire. D. R. C. E. Estes Exhibit device. J. U. Carter Filaments, Production of tungsten. J. V. Carter Filaments, Production of tungsten. J. V. Carter Film magazine. W. N. Selig Firmarm ejector. L. H. Gobb
Engine starting device, Internal combustion. G. J. Anderson Envelop
Exhibit device (2 pats)O. E. Kellnm Explosive engineF. W. Peck Face protectorF. S. Lozuaway
Facing machine, Pedestal jaw. R. A. Marsh Farming implements, Device for holding teeth in
Fastening deviceC. W. Stark Fastening inserting machineG. Bryant et al
Feed water regulator, Boiler
Fence machine, Wire
Fence post, MetallicE. C. Kalın Fertilizer distributerJ. Blue Fertilizer mixer and distributer
Filaments, Production of tungstenA. Lederer
Film magazine. W. N. Selig Firmarm ejector. L. H. Cobb Firearms, Trigger mechanism for antomatic.
Filaments, Production of tungsten
Flat fron, Electrically heated
cutting. D. E. Kempster Flexible pipe. II. T. Inghram Floor construction. Composite. F. W. Wilson Flower pot holder. T. I. Browning Flue stopper. C. A. Roseland Flue stopper. C. A. Roseland Flue stopper. C. E. Kellar Flying machine. C. W. Waller Flying machine. W. Rebikoff Flying machine. W. Rebikoff Flying machine. W. Green Flying machine. J. Helfer Flying machine. J. Helfer Flying machine. J. L. Clark Folding box. J. L. Clark Folding box. O. H. Holdridge Foot arch support. S. Schwarzschild Forging axles and similar articles. Apparatus for. G. G. Thorp et al Forging machine. Automatic tool. L. II. Kunkle
Flower pot holder. T. J. Browning Flue stopper. C. A. Roseland Flue stopper. O. P. Egan
Flume gateG. E. Kellar Flying machineC. W. Waller Flying machineW. Rebikoff
Flying machine. W. W. Green Flying machine. A. Helfer Flying machine. II. Gundersen
Folding box
ratus forG. G. Thorp et al Forging machine. Automatic tool
Forging machine. Automatic tool L. H. Kunkle Fruit gatherer W. Y. Richardson et al Frnit picker T. M. McGrail et al Furnace W. Scheffler Fuse for shells with safety device. R. Sohlman et al Game counter D. McDonald Garbage and similar refuse, Apparatus for handling J. B. Livingston Garbage can. Sanitary H. T. Klugel Garment hanger M. C. White Gas apparatns. Vertical retort J. H. Taussig Gas engine B. M. Aslakson Gas into contact with a liquid. Apparatus
Game counter D. McDonald Garbage and similar refuse. Apparatus for
handlingJ. R. Livingston Garbage can, SanitaryH. T. Klugel Garment hangerM. C. White Gas apparatus. Vertical recort
Gas engine B. M. Aslakson Gas into contact with a liquid. Apparatus for bringing II. T. Durant

	_
Gas producer	
Gearing, Variable transmission	
Grinding and sharpening machine]
Gyrating screen. A. D. Hughes Gyroscopic top. J. F. O'Bryne Hamo fastanor	1
Hammer, SteamF. E. Lane et al HandsawJ. Wood	
Harness machine beading attachment J. A. Tenney Harness treating apparatus. J. R. Moore]
Hat and receptacle, Combined]
Harness machine beading attachment J. A. Tenney Harness treating apparatus. J. R. Moore Hat and receptacle, Combined Hatpin point protector J. Kerchner Hay and similar material drying apparatus. E. Eichler et al Hay loader]
Heating and drying machine. F. P. Mies Heel for boots and shoes, Reinforced resilient. A. Ashley Heel plate. J. Jeffre Hides and skins, Machine for fleshing, nnhairing and working out. G. W. Baker Hoist H. L. McCoy et al Honeycomb foundation starter G. A. O. Boynum Horseshoe calk. G. A. O. Boynum Horseshoe calk. R. C. Watrous Horseshoe calk. Self sharpening R. W. Comstock, Jr. Hub for automobiles and similar vehicles, Wheel. A. P. Stocker Hydrostatic motor. J. G. Mecham Ice cream freezer dasher. F. Tyson Illusion device. F. Miele Incubator. G. H. Lee Induction coil vibrator. E. B. Jacobson Inhaling apparatus. F. A. Holleman Inking and damping mechanism. Controlling device for W. J. Main Insecticide applying machine. H. J. Theim Insulating receptacle. L. W. Puffer Insulator A. B. Tinsley Insulator, High tension strain L. Steinberger Ironing board work clamp. A. T. Hagen Ironing board work clamp. A. T. Hagen Ironing board work clamp. A. T. Hagen Ironing board strain for]
Heel plateJ. Jeffre Hides and skins, Machine for fleshing, nn-hairing and working outG. W. Baker]
Hoist]
Horseshoe calk]
Hub for automobiles and similar vehicles, Wheel A. P. Stocker]
Ice cream freezer dasher. F. Tyson Illusion device. F. Miele]
Induction coil vibratorE. B. Jacobson Inhaling apparatusF. A. Holleman Inking and damning mechanism Controll-	3
ing device forW. J. Main Insecticide applying machine. H. J. Theim Insulating recentacleL. W. Puffer]
Insulator A. B. Tinsley Insulator, High tension strain	j
Ironing board work clampA. T. Hagen Ironing board Folding stand for C. W. Brode	1
Jewelry, Producing articles of	I
Journal box an ddust guard, Combined. Knitted coat. Knitted coat. Knitting machines, Stitch transferring mechanism for circular. F. E. Wilson et al Knives, Manufacturing. H. C. Hart Knob fastener. Lamp, Arc. O. A. Ross Lamp, Electric safety. Lamp socket, Electric. F. A. Lavercombe Lantern. Last, Automatically locking. O. E. and W. A. Krentler Last, Repairing and stretching. J. Heuyard	I
mechanism for circular. F. E. Wilson et al Knives, Manufacturing	I
Lamp, Electric safetyB. Christiansen	I E
LanternA. R. Pritchard Last, Automatically locking	l I
Last, Repairing and stretchingJ. Heuyard Lasting machineS. W. Ladd et al	I I I
Last, Repairing and stretching J. Heuyard Lasting machine S. W. Ladd et al Lathe N. D. Chard Lathe G. J. Costello Lathe attachment G. II. Nichols Lathe Multiple turret O. Crell	I
Lathe, Multiple turretO. Crell Lead, Manufacture of whiteL. Falk Lens clampF. W. Nolte	I
Letters and putting them into envelops. Machine for foldingM. Bunnig LevelA. P. Lidholm	F
Lathe, Multiple turret	Ι
composition of any boiling mixture of	I 18
Loading deviceE. C. Huff Locket purse sash pin L. D. Bergeron Log gradle R. H. Vollans	E 13
Loom shuttle M. Goulet Machinery guard E. W. Pinkerton Magneto generator.	R R
Loader and carrier. F. Johnson Loading device. E. C. Huff Locket purse sash pin. L. D. Bergeron Log cradle. B. H. Vollans Loom shuttle. M. Goulet Machinery guard. E. W. Pinkerton Magneto generator. W. D. and J. R. Pennington Manholes for boilers and pressure tanks. Reinforcement for. T. J. Weldon Measuring tool. A. Zaino	R R R
Measuring toolA. ZainoMedicinal cupM. ZuckermanMegaphoneM. O. Smith	R R R
Metal elements, UnitingC. F. Jacobs Metal, Machine for manufacturing expan- ded (2 pats)	R R R
Metal polish	ararararararara
Modeling machine. W. Spiller Motor. H. A. Hoeschen Mater C. B. Redrup	67.750
Mowing machineJ. Bader Multiple cylinder engineR. Hennig Vusic sheets Machine for making perfor-	27.07.3
ated	222
Name plateA. S. Eberman et al Non-refillable boxW. D. Hughes Nut and flange. Adjustable sleeve	8
Manholes for boilers and pressure tanks. Reinforcement for. T. J. Weldon Measuring tool. A. Zaino Medicinal cup. M. Zuckerman Megaphone. M. O. Smith Metal elements, Uniting. C. F. Jacobs Metal, Machine for manufacturing expanded (2 pats). H. Salmon Metal polish. C. Ellis Mines Walling of F. Nellen Modeling machine. W. Spiller Motor. H. A. Hoeschen Motor. H. A. Hoeschen Motor. C. B. Redrup Mowing machine mechanism for automatic R. Hennig Music sheets, Machine for making perforated. P. J. Meahl Musical instruments, Regulating mechanism for automatic P. Welin et al Name plate. A. S. Eberman et al Non-refiliable box. W. D. Hughes Nut lock (2 pats) J. H. Skelton Nut lock. C. B. Stillwell Nut lock. C. B. Stillwell Nut lock. C. B. Stillwell Nut lock. C. B. Stillwell Nut lock. C. B. Stillwell Nut lock. C. B. Stillwell Nut lock. C. B. Stillwell Nut lock. J. Covert	888
Nut removing deviceW. II. Crilley Oil burnerF. A. Curtis	S
Ore concentrator	2 222
Packaging machine B. F. Cramer C. G. F. Hall Packing case J. A. Moss	
Paint or color disperser with more than one air nozzle	2.2

Padlock, PermutationW. C. Maloz Paints and the like, Manufacture of vehi- cles forF. II. Walker et al Paper board, Machine for making double- faced corrugatedF. M. Busald Paper manufacturing machine. Toilet
Padlock, Permutation
Phonograph (2 pats)C. O. Hays Photographic machineR. J. and J. A. London
Photographic printing apparatus
for C. P. Blinn Piano violin L. Bajde Picture frame P. B. Littlehale Pile for forming concrete piling, Removable R. J. Beall, Jr Piling, Interlocking metal sheet R. P. B. Rearron
Pinene into camphene, Converting
Pipe cleanerJ. M. Simmons Pipe coupling clamping ring. J. Clark
Pipe coupling clamping ring. Lock bar J. Clark Pipe. Making. M. J. McMartin Pipe rest. G. W. Morter Pipe wrench. C. W. Stover Plaster board. Making. J. W. Voglesong Plow, Two way. A. C. Lindgren Pneumatic dnst separator (2 pats) I. H. Specer Pole tip. O. U. Peterson Poles. Making tapering metal. E. E. Slick Pot cover handle. A. N. Kimberley Powder dividing machine. P. H. Brown Power applying mechanism P. E. Muschick Precious metals from their ores, Composition of matter to be used in extracting
Pole tip O. U. Peterson Poles, Making tapering metal
Pot cover handleA. N. Kimberley Powder dividing machineP. H. Brown Power applying mechanism
Precious metals from their ores, Composition of matter to be used in extracting
Pressing and Ceasing irons
tion of matter to be used in extracting Pressing and creasing irons. II. R. Schweinler Pressing irons. II. R. Schweinler I. R. Schweinler I. R. Schweinler I. J. B. Semple Projectile. I. J. B. Semple Protecting device. M. G. Kennedy Pulley. II. J. Gilbert Pump. A. B. Shultz Pump. and shock absorber. Combainstion
Pump, Steam (2 pats) B. O. Gage Pump, Vacuum F. Aronson
Pump valve E. D. Orton Quilting frame E. D. Williams Radiator section F. A. Feldkamp Radiators. Vacuum controlled system for
Rail anchor
Projectile J. B. Semple Protecting device M. G. Kennedy Pnlley H. J. Gilbert Pump A. B. Shnltz Pump and shock absorber, Combaination F. C. Priestly Pump, Steam (2 pats) B. O. Gage Pnmp, Vacuum F. Aronson Pump valve E. D. Orton Quilting frame E. D. Williams Radiator section F. A. Feldkamp Radiators, Vacuum controlled system for G. Mehring Rail anchor C. F. Clawson Rail chair and brace O. Payzant Rail chair and joint lock Combined Rail foint S. Ledgett Railway crossing H. F. Roach Railway rail F. R. Huckstep et al Railway rail stay F. H. Huckstep et al Railway rail stay F. H. Huckstep et al Railway signal and safety device C. H. Kirkendall Railway signalling system Electric T. M. Freeble Railway sleeper grooving machine F. Altenstein Railway fie H. H. Parry
Railway signal and safety device C. H. Kirkendall Railway signalling system, Electric
Railway sleeper grooving machine F. Altenstein
Railway tie
Razor blade holder H. W. Eden Razor, Safety N. L. Phillips
Razor, Safety R. J. Brown Razor, Safety R. P. Cafferty Receptacle, Molded C. R. Rogers Recorder E. F. Speer
Rectifying columnF. Kyll Refrigerator. Show caseA. W. De Neen Resawing machineW. R. Wilkin Refle. RepeatingD. Stergianopulos Roller, support
Rotary engine. T. Idzal Sack holder. C. C. Skelton Sad iron. R. W. Kremer Sanding wheel. S. A. Dobyne
Sash fastener. A. C. J. Roy Sash holder. Window. C. W. Cook Sausage making machine. K. Kather Saw guide, Band. W. J. Hull
Saw set
Railway signalling system. Electric. Railway sleeper grooving machine. F. Altenstein Railway tie. Railway tie. Railway tie. Railway tie. G. S. Wright Railway tie. Railway tie. G. S. Wright Railway track scale. Railway track scale. Railway track scale. Razor blade holder. Razor blade holder. Razor Safety. R. J. Brown Razor, Safety. R. J. Brown Razor, Safety. R. P. Cafferty Receptacle. Molded. Recorder. Refrigerator. Show case. Reswing machine. Refrigerator. Show case. Reswing machine. Roller support. A. Scharnweber Rotary engine. Roller support. Roller support. Roller support. A. Scharnweber Rotary engine. Roller S. A. Dobyne Sash holder. C. C. Skelton Sad iron. R. W. Kremer Sanding wheel. S. A. Dobyne Sash fastener. A. G. J. Roy Sash holder. Window C. W. Cook Sausage making machine. K. Kather Saw guide. Band. W. J. Hull Saw set. T. C. Adams Sawing apparatus. S. Dillon et al Scale, Automatic weighing. A. Gauvin Scale, Computing. J. W. Culmer Scale, Computing. J. W. Culmer Scale, Portable and foldable support for weighing. O. C. Reeves Scales, Portable and foldable support for weighing. C. W. Schultz et al Separatin gand washing apparatus. C. W. Schultz et al Separatin gand washing apparatus. C. W. Schultz et al Separatin gand washing apparatus. C. W. Schultz et al Separatin gand washing apparatus. C. W. Schultz et al Sewer pipe cleaning apparatus. G. Jamnicky
Separatin gand washing apparatus C. E. Christ Sewer pipe cleaning apparatus
Sewing machine attachmentE. Rodman
Sewing machines, Fabric preparing device for. G. Niedermayer Shaft support. F. Lnrsen, Jr. Shears and the like handle, Pruning

Sheaf shocker
Shield A. B. and G. G. Ho 12 iter W. Ristau Shingle stwing machine. R. H. Rienard Ship. N. So jan Shock absorber. G. G. M. dray Slurry, wood pulp. &c., P. der for
Smoke consumer. R. W. E. Lever Smoking tube. F. A. Schrump Smoking tube. II. T. Schrum Snow meltinig machine and operating same. S. Friedhelt Soap, Cake of (2 pats). C. II. J. Dilg () a
Sheaf shocker
Spring motor. C. M. B. Book Spring wheel H. C. B. regret Spring wheel C. L. Dodson Square, Tailor's J. B. u. emfonc Squeegee-head W. A. Tiele Stacking machines, Breast roil for M. Sc inharter Stanchion H. L. Ferris Steam and water separator F. W. Born Sterilizing apparatus G. Bengs Stitching horse, Leather H. J. Bowman Stop mechanism, Adjustable W. Abler
Stove. KitchenetteE. S. Aller
Structural shapes. Method of and appa ratus for producing II. Sack Superheating generator E. Wiar Surveying instrument E. G. Adam: Swather or sickle bar head A. Honey Tallying device C. B. Wolf et a Tanks. Funnel attachment for J. Schneide: Telephone and telegraph system. Composite
D. M. Leich
Telephone circuits, Call system for
Tire, Theumatic A. Dees Tire, Wheel J. D. Marvii Tires, Air-tight valve for pneumatic M. Levrant Tobacco, Removing nicotin from J. Sartig
Tongs. Food W. H. Wheeler
Trolley
Transmission mechanism G. W. Gerlach et al Trolley R. Black Trolley clamp E. Y. Moore Trolley switch for station inductors, &c. O. E. Kellum Trolling hook E. and W. Hautala Trnck loader, Lnmber F. W. Karches Truck, Rail traversing L. H. Flanders Truck, Rail traversing L. H. Flanders Truck, Rail traversing J. J. Dunn Type casting machine A. E. Miller Typewriter Adding J. Mallman Typewriter cover and copy holder, Com- bined G. S. Anderson Typewriting machine A. W. Smith Typewriting machine M. Klaczko Vacuum cleaner W. H. Keller Vacuum cleaning apparatus. G. W. McKenzie Valve C. Mason Valve S. Stucky Valve By-pass A. W. Woodward Valve S. Stucky Valve Hy-pass A. W. Woodward Valve, Feed water strainer J. H. Watters Valve, Fluid pressure W. W. Temples Valve Inspection and mixing Valve mechanism Flush J. M. Young Valve Drackless and quick acting C. Patock Vapor burner M. A. Galvao Vehicle brake D. W. Evans Vehicle door W. H. Jordan Ventilating system E. M. Matthews Vessels using oil fuel, Deck plate filler for. A. Winton Vibroscope C. F. Hopewell Wall construction O. K. Harry Washing device, Clothes C. C. Gridley Washing machine W. H. Higgins Washing or dyeing cops or similar articles, Apparatus for E. Hart
Typewriting machine. A. W. Smith Typewriting machine. M. Klaczko Vacuum cleaner. W. H. Keller Vacuum cleaning apparatus.
Valve. C. Mason Valve S. Stucky Valve By-pass A. W. Woodward Valve, Feed water strainer J. H. Watters Valve, Fluid pressure W. W. Temples Valve, Inspection and mixing.
Valve, IrrigationF. P. Snow Valve mechanismB. Meyer Valve mechanism. FlushJ. M. Young Valve, Packless and quick acting
Vapor burner
Vibroscope C. F. Hopewell Wall construction O. K. Harry Washing device. Clothes C. C. Gridley Washing machine W. H. Higgins Washing or dyeing cops or similar articles. Apparatus for E. Herzog Waste can W. Raster Watch. Chronograph E. Hart
Washing or dyeing cops or similar articles, Apparatus for E. Herzog Waste can W. Raster Watch. Chronograph E. Hart Wax treating apparatus. Paraffin A. Campbell Welding compound R. N. Ruyle Well cleaner C. F. Smith Well drilling. Flexible friction splice for L. L. L. Wichaels et al.
Well drilling, Flexible Friction spice for J. I. Michaels et al Wheel W. B. Lloyd Wheels, Antislipping device for vehicle T. C. Martin Wheels, Cushion attachment for B. Ulrich
Wheels, Cushion attachment for
Winding and rolling machine, Ball. A. G. Brewer et al. Winding davies. A. H. E. Witchell
Winding and rolling machine, Eall
Window guard and screen, Combined
Wire. Automatic machine for stripping and re-coveringJ. H. E. Branson

Wire fabricJ. W. Page
Wire tying device L. Bowers
Wires, Binding block for terminal
Wrapping or packaging machine
G. F. Hall
Wrench
Wrench E. and A. W. Lindgren
Zinc or zinc exid, Separating

Issued August 8, 1911.

MECHANICAL PATENTS. Adhesive applying apparatus.

W. A. Lindenfelser
Advertising device. H. A. Armstrong
Aerating machine. J. C. F. Lawrence
Aerial machine. H. C. Lobnitz
Aeroplane. R. F. Gardner
Aeroplane propeller. T. S. Harris
Air brake, Vehicle. C. Anspach
Airship. O. P. Ostergren
Amales mater. Cancentrating Boiler heads, Means for stiffening...... A. Inokuty
Boots and shoes, Pulling over machine for,
W. Shaw Cars and the like, Locking device for...

W. F. Dunn
Carbureter...
J. M. Ubrich
Cardboard bending apparatus. G. R. Taylor
Carriage attachment, Baby... M. Bleimann
Carriage prop pivot...
D. P. Thorpe
Casting machine, Inlay...

Casting mold...
Chack marking apparatus.

Chack marking apparatus. Casting mold. E. E. Porter
Check marking apparatus.

C. H. Marston et al
Chock. A. McNaughton
Cigar case. C. L'Enfant
Cigar, Trick. A. T. Warren
Clevis. W. H. McWhirter
Clock and shock recorder. Combined.

W. H. Bristol
Clock, Pneumatic. A. L. Hahl
Clock, Watchman's. R. C. Rose
Clothes line. W. O. Walston
Clutch for transmission pulleys.

Coating articles Apparatus for

A. R. Hussey
Coil winding machine. C. L. Fortescue
Collar band protector. J. L. Murphy
Collar fastener. J. H. Jessop
Collar fastening. A. Craddock
Collar, Lock front. S. Sehlesinger

Coloring substances, Manufacturing.....X. Debedat Comb. X. Debedat
Comb. J. G. Higgins
Concrete block forming machine.

Condenser, Outboard, C. and C. E. Ward
Connector E. Mattman
Contact breaker, Mercury L. Banmeister
Control system R. P. Jackson
Control system H. W. Cheney
Conveyer C. A. Morris Control system. R. P. Jackson
Control system. H. W. Cheney
Conveyor. C. A. Morris
Cooking maize or other cereals. F. Pampe
Cord adjuster. W. C. Spicer
Cornice gutter. C. T. Durkee
Cotton chopping machine. W. H. Lynn
Counter guard. W. J. Noon
Counting apparatus, Loaded truck.
R. McGahey
Coupling. E. E. Coman
Cream separator. A. B. Brown
Cream separator. F. A. Shoberg
Crossover, Portable. J. Kerwin
Christophysis. Combined handle and
pulley for F. A. Shoberg
Crossover, Portable. J. Kerwin
Christophysis. R. Goldschmid
Currents. Apparatus for producing high
frequency. L. R. Goldschmid
Currycomb, Self cleaning. S. I. Morkre
Curtain holder, Vestibule. W. E. Tippett
Curtain-pole. M. R. Ward
Cutting machine. O. W. Trumbull
Cutting machine. C. Shaw
Cycle, Water. C. O. Cracroft
Cycles and the like, Braking mechanism for, mechanism for R. Walker Cylindrical deier, Vertical . . . E. P. Towles Damper J. Sliger Dental polishing device J. D. Coney Legacia, Physician Coney Dental poissing server. F. Correll Derrick, Floating. F. Correll Discharge effects on colored grounds, Pro-R. Wuth Envelop ... L. P. Flickinger, Jr. Envelop machine ... M. Vierengel Envelop opener ... A. Constley Exaporative cooler .. W. D. and T. O. Tyson Excavating bucket ... J. C. Crenshaw Excavating machine ... J. C. Boehm Excavating mechanism ... II. II. Harris Evacuatis mounting ... L. F. Adt Eveglass mounting..... Eyeglass mounting. L. F. Adt
Eyeglasses. L. F. Adt
Fan, Electric ceiling. E. Marelli
Fan, Oscillating motor driven. H. M. Shedd
Faucet, Sterilizer. E. C. Spurge
Faucets, Safety lock for H. S. Gardner
Feed water regulator for steam generators.
... W. T. W., and A. Lees
Feeding device for solid materials, Intermittenly acting. G. von Post Fence post brace. J. H. Clegg
Feetilizer distributer. L. H. Horton
Figures, Base for cardboard, R. G. Fraser
File, Paper. G. B. Staples
File shelf. F. Fauth
Filing and indexing appliance. Filter, High pressure.....A. Dondey et al

Film developing, fixing, and washing ap-Film developing, fixing, and washing apparatus. F. F. Nyc
Filter. Pocket. H. II. Dyer
Filtering device. W. J. Smart
Fin forming machine. J. D. Beebe
Finish remover. C. Ellis
Fire hose coupling. J. C. Babst et al
Fires in mines. Means for quenching and
arresting. R. D. Cochrane
Fish scaling tool. M. M. Clarke
Flooring. Die for interlocked sectional. . .
A. W. Nilsson
Flying machine. W. H. Stebbins et al
Flying machine. D. W. Moore Flying machine. W. H. Stebbins et al Flying machine. D. W. Moore Forges, Overdraft blast for ... J. Geist Forging die. W. S. Thomson Frame clip, Metallie. W. J. Dunham Funnel. C. O. Byrd Furnace door opener. S. Lyon Fnrnace draft control. E. Webb Furnaces, Air controller for warm air. ... H. H. Calvin Fnrniture foot socket O. Trinque Furniture, Table D. F. Oliver Fuse and fuse holder, Electric. F. W. Harris Game apparatus F. W. Harris Game apparatus S. H. Kyle et al Garbage receptacle, Sanitary Game apparatus
Game, Card
Garden
Garden
Garden
Garden tool
Garden tool
Garden toop
Garden toop
Garden toop
Gas lighting Box for packing mantles for incandescent
Gas producer
Gas producer
Gas producer
Gas producer
Gas producer
Gas producer
Gas producer
Gas producer
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Samuel
Gas Synthesis Sam Envester, Potato C. Meyer (ay grinder G. Wetterhold A. J. Lebel Heater and cook stove, Combined

1. A. Lachaine
theating and ventilating system.
1. P. Armstrong
Heel attaching machine. J. H. Pope et all
Hinge. Spring. A. J. George Heel attaching machine. J. H. Pope et al. Hinge. Spring. A. J. George Hod stand. S. H. Moore Hoist. Self dumping. L. Callahan Hoisting drums and winches, Attachment for. C. E. Frederickson Honey, Preserving. C. W. Dayton Hency, Ripening extracted. C. W. Dayton Hook and eye. E. T. Launon Horseshoe, Anxiliary. W. F. Custer Horseshoe, Elastic. F. D. Veale Hospital appliance. L. P. Parkhurst Hot air producer and blower. A. Schaeffer Hydroplane. R. Eckley Hot air producer and blower. A. Schaeffer Hydroplane. R. Eckley Hluminating device. C. A. Taepke Incinerator. H. I. Harris Ink roller protector. W. O. Dray Insulating composition. W. Ramel Insulating sheet. C. S. Bird Internal combustion engine.

Internal combustion engine. G. F. Swain Internal combustion engine. R. B. Otis Ironing beard. W. R. McGee Journal box lubricant device. F. Loedige Jugs and the like. Lid for milk.

Keys in locks, Device for holding. G. W. Shailer
Keys in locks, Device for holding.
J. A. Prescott
Knitting machine, Circular (2 pats).
E. Paquette
Lann Adjustable electric Knitting string work fabric. W. T. Barratt
Lamp, Adjustable electric.

Lamp, Arc. G. M. Dyott et al
Lamp box. W. R. Bowles
Lamp fixing, Electric. W. C. Hine
Lantern (2 pats) A. W. Paull
Lantern, Signal C. C. Wakefield
Last. A. W. Redin
Last. Shoe. E. M. Holbrook
Last tube support O. Heath
Lathe-dog. A. C. Niemann
Lawn-edger. J. C. Lindsey
Life preserver H. Paschke
Lifting jack. H. Austin
Lighting diffusing apparatus. Artificial.

Liquid containers, Combined closure and
spreader for E. C. Linkley

Milk, Desiccating. M. Ekenberg
Mine hoist. S. T. Nelson
Mining machine attachment. L. F. Hess
Miter box. G. W. Fish
Mold jig. P. J. Haas
Molding machine. G. H. Ebel
Molding machine. C. Mills
Molding machine. G. W. Southwick
Monocinnamic ester of glyeol.

P. Schickler et al
Mop head and wringer, Combined.

Motor apparatns, Internal combinstion.

S. A. Reeve Motor controller ... T. E. Barnum
Motor horns and the like, Reed for

Motors and dynamos, Construction of electric C. E. Willey Motors, Method of and means for controlling electric C. Eastwood Mucilage anr other liquids, Spreader for Mucilage anr other liquids, Spreader for B. B. Thorsen Nailing machine. J. Lee Neektie former and holder. T. H. Noonen Nest, Trap. W. J. Van Schoonhoven Newspaper holder. W. E. Althouse Nut lock. C. E. Neilsen Nut lock. N. White Nut lock. F. Rippingille et al Nut wrench. C. C. Gnernsey Oiler, Disk. E. C. Shaw Operating mechanism. L. E. Dietz Outlet boxes, Pipe connection for ... Package carrier. F. G. Pope
Packing for piston rods or the like.
G. H. Robinson
Packing. Metallic. F. Felbinger
Packing ring, Piston. A. J.West
Padlock. H. Hanflig
Pail attachment. Milk. W. Jones
Paper and cardboard, Feeding mechanism
for. C. H. Heywood et al
Paper board, Scoring. G. R. Wyman
Paper feeding device. W. E. Wines
Paper feeding machine. M. Vierengel
Partition stud, Plaster board.
Pen, Fountain. F. M. Ashley
Perforating device, Paper. B. F. Berry
Phosphorus peutoxid and cementitious products, Producing. F. S. Washburn
Photographic printing machine, Automatic.
G. W. Ferguson
Pianos, Expression device for. Pipe lengths, Apparatus for uniting...
J. Fraser
Pipe stem, Tobacco... J. O. Hebert
Piston pins, &c., Fastening device for...
A. B. Shultz
Pliers (2 pats)... W. A. Bernard
Plow... H. Mahler
Plows, Reversible bearing for tree...
J. Porteons
Plug, Electrical attachment... G. C. Marx
Plug inserting device... J. Glanz
Plumber's trap... P. Gollner
Pocket, Garment... M. I. Shapiro
Pocket, Pencil holding... J. Schwartz
Pole and socket, Coupling. G. A. Hoffman
Pool and billiard table register...
A. E. Hovey
Pool table registering device.
B. L. Epstein
Preserving corn... J. II. Schneider
Pressure gage, Registering and integrating. Preserving corn. J. II. Sehneider Pressure gage, Registering and integrating. S. B. Bilbrough Printing by sound. A. C. Ferguson Printing presses, Cutting and folding device for. W. F. C. Foster Propeller. J. R. Fiala Propeller. W. J. Mason Protractor and rule, Combined. W. S. Adams Pump. J. Milbnrn Pump. J. L. Larlin Pump. J. Milbnrn
Pump. J. L. Latta
Pump, Liquid piston vaeuum. M. A. Monlin
Pump, Rotary. F. J. Cnrtis
Pump, Rotary. F. J. Cnrtis
Pump, Rotary. A. P. Smith
Pump, Rotary. A. P. Smith
Pump, Rotary. A. P. Smith
Pump, Rotary. A. P. Smith
Pump, Rotary. A. P. Smith
Pump, Rotary. A. P. Smith
Puzzle. G. S. Wood
Quilting frame. J. G. Althouse
Radiator. K. M. Boblett
Radiator construction (2 pats). V. J. Mayo
Rail joint. C. G. Burress
Rail support. W. P. Day
Railway cattle guard canseway.
S. J. Billington et al
Railway eross tie. S. A. Fassett et al
Railway electrie. R. J. Dearborn
Railway, Endless pleasure. A. Stott
Railway fastening device. J. W. Blower
Railway rail, joint, chair, and tie.
J. L. Arnold
Railway rail support. W. P. Day
Railway spike. J. S. Fox
Railway spike. J. S. Fox
Railway spike. E. Eriekson
Railway switch operating mechanism, Au-Railway switch operating mechanism, Automatic..... F. Hoffman

Railway tie, ReinforcedW. D. Forsyth Range coverE. Melton Ratchet wrench, AdjustableM. McCoy Razor, SafetyJ. L. Watson Razor, SafetyH. R. Wade Razor, SafetyR. C. Carreras Razor stropping deviceM. F. Coons Reaction engineE. R. Gill Receptacle, Heat insulated. J. S. Hopkins RegisterP. F. Larkin Register operating mechanismW. I. Ohmer et all Resilient wheelW. I. Ohmer et all Reings, Manufacture of expansible finger and other smallA. Emrich Riveting machineH. Lloyd	'I
Ratchet wrench, AdjustableM. McCoy	ń
Razor, Safety H. R. Wade Razor, Safety R. C. Carreras	7 7
Razor stropping deviceM. F. Coons Reaction engineE. R. Gill	Ī
Receptacle, Heat insulated. J. S. Hopkins RegisterP. F. Larkin	'! '1
Register operating mechanism	1
Resilient wheelV. E. Clark Rings, Manufacture of expansible finger and	. 1
other small	Ί
Rock drillJ. A. Thompson et al	T T
Rotary engine	r r
Rotary furnaceI. L. Briggs RowlockL. Rothgery	Γ
Rotary engine. W. Alexander Rotary furnace. I. L. Briggs Rowlock. L. Rothgery Rubber forming articles from waste	T
Rudder, Double actingJ. C. Christiansen	T T T
Sand or the like distributerW. Huber	Т Т
Sash cord guideJ. P. O'Reilly	i
Sash, Window	7
Scale W. R. Allen	Î
Scoop, Wheel mountedD. W. Patterson Score board Electrically operated	T
Score indicator R. B. Lewis	T
Scraper, Gravel	r r
Screw driver having adjustable handle W. S. Thomson	7
Screw, WoodI. L. Messenger Scaming machine Can topJ. Maline	T
Secondary or storage batteryX. Dodge Sectional boilerA. B. Reck	Т
Sceder and cultivator tooth. T. B. Rowell Service box section	Γ
Sewing machine buttonhole working attachment	Γ
sewing machine buttonhole working attachment	T
Shade and curtain bracket, Combined win-	Г
dowJ. M. Ashmore Shaft coupling, FlexibleF. H. Treat	T
Sharpener, Lawn mowerF. C. Haynes Sheet holderJ. Pohoralek	Γ
Sheet metal boxM. Kamenstein Shield for icemen and others	T
Shingle sawing machineL. S. Todd	'1
Shock absorberF. Neilsen Shock absorberE. Rector	Т
Shoek absorber, GradnatedE. V. Hartford	7 7
Shocking machine attachment	7
Shoe upper fastener	'l '1
Shoe uppers, Die for cutting out parts ofL. C. Colt	T J
Shovels Dipper trip for steam.	J Z
Sheet metal box	7
Sleigh and bob-sled runnerB. M. Wentworth	
Sleigh-bob	1
Smoke consuming furnace. O. D. Orvis Soda, Obtaining bicarbonate of N. Wriukle et al. Spanner wrench. E. A. Denham Spectacle glass, Magnifying. M. von Rohr Speed recorded. W. H. Bristol Spoon, Medical. W. F. Kahl Spray burner. W. A. Beunett et al Spring wheel. R. C. Jarvis Square and bevel. J. T. Urbach Stacker, Pneumatic. W. R. Miller Stalk cutter. B. P. Harrington Stamp affixer. W. F. Schweiger et al Stamp Hand. C. E. Norin et al. Stanchion, Cattle. L. Champion Stand pipe. M. M. Moore Stay bolt, Flexible. J. W. Keeley Stay bolt for bollers, Flexible (2 pats) B. E. D. Stafford Steam and hot air heater, Combined J. Demarest	- 1
Spanner wrenchE. A. Denham	7 7 7 7 7 7
Speed recordedW. H. Bristol	1
Spray burnerW. A. Beunett et al	1
Square and bevelJ. T. Urbach	
Stacker, PneumaticW. R. Miller Stalk cutterB. P. Havrington	1
Stamp amxer	7
Stand pipe	\
Stay bolt, Flexible	1
Steam and hot air heater, Combined	7
Steam trapJ. E. Purser	7.
Steam and not air heater, Combined. J. Demarest J. Demarest Steam trap. J. E. Purser Stecl, Manufacture of . W. R. Walker et al. Steel tie. J. Jordon Steclyard. E. T. Seton Steering gear. T. Mayhew Still. J. I. H. Jewell Stock, Handling. M. M. Suppes Stock handling and stock storage yard and equipment. M. M. Suppes	1. 1. 1.
Steering gearT. Mayhew Still I II Jewell	7
Stock, Handling and stock storage yard and	- X
equipmentM. M. Suppes Stocking folderA. I. Patterson	7,
Stone crusherE. B. Symons Stones and the like Machine for splitting	7,
or other working ofC. G. Smith Storage battery and treating the same	7
Stove, HeatingA. R. Akin	7
StrainerJ. A. Clark Straining tankF. W. Goetz et al	7
Stock handling and stock storage yard and equipment. M. M. Suppes Stocking folder. A. L. Patterson Stone crusher. E. B. Symons Stones and the like, Machine for splitting or other working of. C. G. Smith Storage battery and treating the same. T. A. Edison Stove, Heating. A. R. Akin Strainer. J. A. Clark Straining tank. F. W. Goetz et al Street cleaning machine. E. De la Shaleri Street washing apparatus. P. Shannon	
Structure, MetallicP. M. Wege Suprarenal gland, Preparing extractive com-	
pounds of thcC. E. Vanderkleed Swimmer's device, Attachable	
SwitchJ. O. Massey G. W. Hart	
Switch	
Street cleaning machine. E. De la Shaleri Street washing apparatus. P. Shannon Structure, Metallic. P. M. Wege Suprarenal gland, Preparing extractive com- pounds of the C. E. Vanderkleed Swimmer's device, Attachable. Switch. J. O. Massey Switch. G. W. Hart Switch. H. E. Leppert Swivel lock. J. M. Delmore Syringe, Thermo electric fountain. N. E. Houser Talking machine amplifying horn. R. A. Boswell Tax receipt form. C. B. Mahone	4
Tax receipt form C. P. Mahono	
zaa receipt form	

Taximcter (2 pats)J. G. MacPherson Tea and coffee makerC. B. Crofford Teeth, Mold for making artificial
Tclegraphic instrument
Teeth, Mold for making artificial
Telescope sights, Reversible mounts for W. Bennett Temperature compensating device
Tenpin spotting deviceII. J. Martin Testing instrumentH. W. Secor Thill couplingP. Bedwell Threshing machineC. Van Bergh Thumb knifeE. D. Arwine
Tie plate and anticreeper, Combination P. W. Moore Tile marker
Tclescope sights, Reversible mounts for W. Bennett Temperature compensating device. W. H. Bristol Tenpin spotting device. H. J. Martin Testing instrument. H. W. Secor Thill coupling. P. Bedwell Threshing machiue. C. Van Bergh Thumb knife. E. D. Arwine Tie plate and anticreeper, Combination. P. W. Moore Tile marker. H. P. Fogertcy Tire. D. Lippy Tire. Tire, Pneumatic. C. E. Brower Tire shield. J. W. Downes Tire, Vehicle. F. H. Holton Tire, Vehicle. Tobacco paper from pure tobacco stems and product resulting therefrom, Manufacturing Test Combination. F. Giordano
product resulting therefrom, Manufacturing F. Glordano Tool, Combination W. H. Stanley Tool holders, Adjustable stop for machine. W. A. Johnson et al. Tool steel retainer for percussive tools. W. Prellwitz Top. J. R. Myers Track connection (2 pats) J. W. Blower Track sander S. S. Underwood Transformer. Polyphase W. M. McConahey Transmission system G. C. Cummings et al. Transmitting intelligence, System for. G. C. Cummings et al. Tree prop. Exteusion C. P. Tatro Trolley G. E. Palmer Trolley A. Nash
Tool steel retainer for percussive tools W. Prellwitz
Track connection (2 pats)J. W. Blower Track sanderS. S. Underwood Transformer, Polyphase
Transmission system
Transmitting intelligence. System for G. C. Cummings et al. Tree prop. ExteusionC. P. Tatro
Trolley G. E. Palmer Trolley A. Nash Trolley harp J. A. Norton Trolley tracks, Switch and construction for
Trolley tracks. Switch for overhead. X. Whichello Truck. W. J. McCov
Trolley harp J. A. Norton Trolley tracks, Switch and construction for overhead
Tunneling machine W. R. Collius Tunnels. Mucker for removing ore, rock, dirt, &c., from J. G. Leyner et al.
Tunnels, Oscillating shevel muck remover for. J. G. Leyner et al. Turbine. F. Ljungstrom Turbine, Combination. S. Z. de Ferranti
Turbine, Rotary condenser and condensing steam. E. S. G. Rees Type chase. C. E. Adamson
Typewriting machine C. B. Yaw Typewriting machine L. W. Labofish Uncoupling rod bracket C. J. Schultz
Universal jointP. A. Merten Vacuum apparatus for hyperemic treat- mentsR. A. C. Holz Valvo H. H. Lindemuth
Valve for beer tapping apparatus, Check II. Rasbridge Valve mechanism J. W. Ledoux
Valve for beer tapping apparatus, Check. II. Rasbridge Valve mechanism. J. W. Ledoux Valve mechanism. W. B. Hughes Valve mechanism. Reversing. W. C. Post Valve, Sucker. J. D. Benson Vehiele brake. J. C. Turnbull et al. Vehicle brake. J. O'Connor, Jr. Vehicle spring. R. M. McGahee Vehicle storm front. W. V. Deahl Vehicle wheel. A. Jutila Vehicle wheel. S. D. Brooks Vehicle wind guard. M. L. Williams Vending device. A. Pestel
Vehicle brake. J. O'Connor, Jr. Vehicle spring. R. M. McGahee Vehicle storm front. W. V. Deahl
Vehicle wheelA. Jutila Vehicle wheelS. D. Brooks Vehicle wind guardM. L. Williams
Vending machine. A. R. Hussey Vending machine. G. F. Linck Vending machine. J. Schmidt
Vending machine, Coin controlled J. V. Morris et al. Vibrator for local application to the per-
Vise (2 pats). E. Fisher Volt and ammeter. II. Fish Voting machine. L. R. Winslow
Vehicle wheel. S. D. Brooks Vehicle wind guard. M. L. Williams Vending device. A. Pestel Vending machine. A. R. Hussey Vending machine. G. F. Linck Vending machine. J. Schmidt Vending machine. J. V. Morris et al. Vibrator for local application to the person. Electromagnetic. A. Rosenberg Vise (2 pats). E. Fisher Volt and ammeter. H. Fish Voting machine. L. R. Winslow Wagon brake, Automatic. J. Blaska Washboard. G. R. Prescott Water elevating apparatus. T. W. Gray Water elevating apparatus. T. W. Gray Water elevating apparatus. O. A. Roed Weighing machine, Grain. E. H. Pool Welding tire and like joints, Apparatus for. H. Siegmann Wells, Blow valve for gas. A. N. Alten et al Wheel holding device. H. H. Gallagher Whip manipulator. L. Hancher Whistle, Steam. A. T. Jolma Window screen. A. D. Walker Wire with yarn or its equivalent. Machine for coveriug or insulating gearing.
Wells, Blow valve for gas. A. N. Alten et al Wheel holding device II. II. Gallagher Whip manipulator
Whistle, SteamA. T. Jolma Window screenD. Walker Wire with varn or its equivalent. Machine for covering or insulatingD. Noble Worm drive and compensating gearing
D E Ross
Woven fabric. J. E. Kerr Wreneh. W. F. Probst et al. Wrench. C. H. Kenney Yarn cleaner for spoolers, spinning, and similar machines. J. R. and W. B. MacColl

Issued August 15, 1911.

MECHANICAL PATENTS.

Aerostat and the like, Dirigible
Aerostat and the like, Dirigible
Air compressor. E. Hill Air compressor, Windmill actuated S. Pichault Air transmitter J. Frykberg Airship W. II. Campkiu Airship R. Wankmuller Airship T. M. Crepar Airship T. M. Crepar Airship T. A. I. Lockwood Airships, Engine mounting for A. Clement Alkali peroxid, Making a dense stable composition containing E. Thomann Awl controlling mechanism Bale tie machine F. L. Webster Barrel forming die L. Bauroth Barrels, Machine for forming sectious of metal G. Weiss Basin waste connectiou F. Hoffman et al. Bath or basin fitting P. Mueller
Airship. W. II. Campkiu Airship. R. Wankmuller
Airship T. M. Crepar Airship propeller A. J. Lockwood
Airships, Engine mounting for
AlkaIi peroxid, Making a dense stable com- position containingE. Thomann
Awl controlling mechanism
Bale tie machineF. L. Webster Barrel forming dieL. Bauroth
Barrels, Machine for forming sectious of metal
Basin waste connection. F. Hoffman et al. Bath or basin fittingP. Mueller
Bearing, BallG. W. B. McElhone
Bearing structure for machines operating in water. J. Otto Bed bottom, Spring. F. Karr Beverages containing carbou dioxid, Manufacture of Man
waterJ. Otto Bed bottom, SpringF. Karr
Beverages containing carbou dioxid, Manufacture of K. and E. Gilg Binder, Loose leaf J. B. Barlow Bit stock P. Dorsey Board set and nail driver, Combined A. Vaughau Boat, Metallic F. H. Darrow Boiler flue cleaner H. Stratton Boot and shoe arch-supporter J. Stern Bottle filling machine G. W. Parshall Bottle filling machine C. L. Bastian Box corner fastening C. L. Bastian Box covering strips, Machine for attaching reinforcing slips to E. Jagenberg Box lid A. Bell Bracelet H. Harris
Binder, Loose leafJ. B. Barlow Bit stockP. Dorsey
Board set and nail driver, Combined Vaughau
Boat, MetallicF. II. Darrow Boiler flue cleanerII. Stratton
Bott and shoe arch-supporterJ. Stern Bottle filling machineG. W. Parshall
Box corner fastening
ing reinforcing slips toE. Jagenberg
Bracelet
Brake mechanism, Load regulated
Brazing or similar work, Apparatus for
Briquet and making sameA. Zindler Briqueting presses, Means for filling the
molds of J. Leflaive Brush, Fountain W. L. Peeler
Brush making machineS. R. Mason Bucket, Clam shellP. A. Orton
Building block jointC. W. Frost Burglar alarmG. A. Sabine
Burnishing wheel. D. Zemborski Button, Separable S. E. Norman
Cableway
key set
Can cover
Car brakeE. G. Lofgren Car chainJ. McDonald
ing reinforciug slips to . E. Jagenberg Rox lid
Car door operating meansF. G. Borg Car door safety bracketE. A. Hill
tack for
Car, Dump. W. Q. Olden
Car side bearing, Railway E. A. Laughlin Carbon, Flaming are W. T. Conn
Carboys, Receptacle for K. F. Stahl Carbureter W. M. Gentle
CarbureterE. M. Stevenson CarbureterJ. Harris
Carrier
Cashier's protecting device, BankB. F. Miller
Cement MagnesiaR. Eggenhoffner
Chain link or coupling device for
Cigarette machineE. Koerner Cleaning and polishing device
Clod crusher. J. E. S. Taylor L. L. Shannon
Clothes line supportO. C. Pennington
Cock, Automatic safety gage. J. L. Studds
Coffee potM. Griswold, Jr.
Collar fastener, HorseJ. G. Friberg Colored bodies Waking solidB. Melzer
Column, WoodenG. B. Kyle ConcentratorW. A. Butchart
Concrete and the product thereof. Mixing and preparing hydraulic cement
Concrete compostionJ. M. Rauhoff
track for J. A. Pickett Car, Dump. V. E. Sisson Car, Dump. W. Q. Olden Car grain door J. Henry Car side bearing, Railway E. A. Laughlin Carbon. Flaming are. W. T. Conn Carboys, Receptacle for K. F. Stahl Carbureter. W. M. Gentle Carbureter. E. M. Stevenson Carbureter. J. Harris Carrier. J. W. Moore Carton, Cardboard. G. C. Pexton Cashier's protecting device, Bank. Caster, Adjustable W. J. Haupeter Cement Magnesia R. Eggenhoffner Centrifugal machine A. C. Busby et al. Chain link or coupling. C. Bryant Chains, Rivet removing device for. F. B. Widmayer et al. Chin support. A. F. Hammond Cigarette machine E. Koerner Cleaning and polishing device. L. Sbannon Clothes line clamp W. C. Lea Clothes line support. O. C. Pennington Clothes rack T. A. North Cock, Automatic safety gage. J. L. Studds Cockroach trap A. A. Borkenhagen Coffee pot M. Griswold, Jr. Coffee preparation L. Rosclius Collar fastener. Horse J. G. Friberg Colored bodies, Making solid B. Melzer Councerte and the product thereof, Mixing and preparing hydraulic cement Concrete and the product thereof, Mixing and preparing hydraulic cement Concrete compostion J. M. Rauhoff Concerte reinforcing means J. F. Havemeyer Condenser K. K. Kuhlmann Conduit creeper H. Lehmaun Container or receptacle D. F. Anderson Conveyor P. Lorillard Cooking oil bearing material. Apparatus for and method of A. W. French Copy holder F. D. Jones Corn shocker F. D. Jones Cream of tartar Manufacture of
Container or recentagle D. F. Anderson
Conveyor
for and method ofV. W. Freuch Copy holderF. D. Jones
Corn shocker. F. M. Jones Cotton chopper. J. R. Hester Crane, Traveling. W. F. Brothers
Crane, Traveling
G. A. D. MOSZCZERSKI
Crushing and grinding little. Konel. J. E. Hovendick (vishing mill. T. L. and T. J. Sturtevant Cultivator. Lister. L. E. Waterman Cultivator. Lister arch for
Cultivator. Lister. L. E. Waterman Cultivators. Spreader arch for

Culverts, Core for making. J. W. Kempf Cutter head. J. D. Lammel Cutter head. E. S. Shimer Cutting machine. I. Beissel Cycle lock. F. Groleas Cycle tandem attachment, Motor. W. F. Bracher Dam mold. T. J. Kelly Damper operating mechanism, Pneumatic. L. B. Doman Damper regulators, Expansible mechanism for. E. J. Deegan Decoctions, Apparatus for making.

Dental engines, Air and water attachment for. R. E. Cunningham et al. Derail appliance, Double. L. J. Kieffer Display rack, Bedstead. J. P. Elliott et al. Distribution systems, Protective device for. R. M. Ostermanu Diving helmet A. Cypra Diving helmet A. Cypra Door lock. A. Lee Door operating mechanism (2 pats). F. Seaberg Door operating mechanism.

Double compression press. J. Leflaive Draw bar and yoke. G. C. Murray Dredger for powder form material. J. J. Mahouey Dredger for powder form material. J. Zipp Double compression press. J. Leffaive Draw bar and yoke. G. C. Murray Dredger for powder form material.

Dredger for powder form material.

J. Zipp Drier. J. P. Coe Drill. L. Canfield Drill Frame. S. J. Harry Irill press. N. A. Jennet Drills. Pressure reducing mechanism for motive fluid. D. S. Waugh Drinking glasses. &c. Protector for. R. Clarke Driving mechanism. Friction. W. Sprague Dye. Black trisazo. M. Kahn et al. Dyeing apparatus. E. De Journo Dyestuff of the gallocyanin series and making same. Leuco C. De la Harpe et al. Edge setting iron (Reissue).

Egg case partition, Removable. Z. Beaudry Eggs. Apparatus and method of transferring aud candling. H. Vanneman et al. Electric battery. Primary. G. A. Lutz Electric furnace. A. Helfenstein Electric machine. Dynamo. J. L. Burnham Electric machine. Dynamo. J. L. Burnham Electric machines. Means for cooling dynamo. H. Roos Electric oscillations. Apparatus for producing. R. C. Galletti Electrical exchange systems. Calling device for A. H. Dyson Electrical furnace. H. Nathusius Electrodes. Applying protecting-glaze to carben. J. K. Suyder Electrogrific apparatus. J. W. Konevel Electrogrific apparatus. J. W. Konevel Electromagnet coil. F. W. Reeves Elevator. F. Schwarz Elevator guide lubricator. B. E. Marshall Engine starter. Automobile. H. Mason Engine starter. Automobile. H. Mason Engine starting or cranking mechanism. Explosive. R. S. Foote Engine starting or cranking mechanism. Explosive. R. S. Foote Engines, Ignition in explosive. J. H. Stringham Eyelet baking can. J. H. Harrington Eyelet tape. G. H. Wicke Excavating and conveying apparatus. J. Hayward Excavator. Power driven post hole. R. Excavator. Power driven post hole. R. Excavator. Power driven post hole. R. Excavator. Power driven post hole. R. Excavator. Power driven post hole. R. Excavator. Power driven post hole. R. Excavator. Power driven post hole. R. Excavator. Power driven post hole. R. Excavator. Power driven post hole. R. Excavator. Power driven post hole. R. Excavator. Power driven post hole. Eyelet tape ... G. H. Wicke
Excavating and conveying apparatus ...

J. Hayward
Excavator. Power driven post hole ...

R. T. Burdette
Explosive engine ... W. Ottoway
Explosive generator ... W. N. Howell
Fabric carrying apparatus ... J. Zillhardt
Fan ... F. I. Cavally. Jr.
Fastening inserting machine ...

I. C. Buckminster
Feed guide ... G. C. James
Feed receptacle ... G. C. James
Fence post and wire fasteuer ...

E. M. Bucchele
Fiber compositiou and making the same ...

J. B. Hall
File making apparatus ... J. B. Hall
File making apparatus ... J. Beche
File, temporary binder, loose leaf book, and
the like ... J. Walker, Jr.
Filter, Continuous ... B. W. Traylor
Filter, Impact ... T. H. Neikirk
Filter, Varnish ... C. J. Healy
Finish remover ... C. Ellis
Firearms. Device for the suppression of
the report of ... E. Thurler
Fish cutting machine ... C. Wacker
Fish hook extractor ... L. Buras, Jr.
Fishing liue leader ... J. A. Dennis
Flashing ... D. J. Galbraith
Floor cleaning machine ... M. Scyferth
Floor surfacing machine, Stone ...

Fluid compressor, Gaseous ... E. Nauer
Fluid pressure regulator ... A. Gloeckler
Flushing mechanism, Tank G. G. Passaro
Flushing tank for closets ... Furst et al.
Flying machine ... W. D. Burk
Flood Artiele of ... E. W. Anderson Flushing mechanism, Tank, G. G. Passaro
Flushing tank for closets. S. Furst et al.
Flying machine. E. II. Skinner
Flying machine. W. D. Burk
Food, Article of. E. W. Andersou
Foot protector. J. L. Thorubury
Form for measuring dress skirts. E. W. Severe
Form, Lady's folding garmeut. B. Cahn
Furrow guide. K. O. Berven
Fuse, Shell. K. Voller
Garment or merchaudise hanger. N. D. Cohen
Gas burner mixing device. K. Eberle
Gas condenser. G. E. Woods
Gas controller. R. L. Avery
Gas from wells. Apparatus for obtaining.
Gas generator. L. M. Hansen
Gas lighter. F. J. Hall
Gas lines. Cut off for. II. C. Grimes Gas lines. Cut off for.....II. C. Grimes

	-
Gas meter, PrepaymentE. A. Reeves Gas, Method of and apparatus for making liquid	Ма Мо Мо
Gas, Process of and apparatus for making E. B. Benham Gearing, Transmission	М
Gearing, Transmission	М(М(
Glass melting meansW. W. W. Keyes Glass tempering device	Me
Glove, BaseballW. P. Whitley GovernorA. L. Wyman Gowns, Foundation lining for maternity	Mi M
Grass and potato digger, Quack	$\frac{M}{M}$
Grate, FireJ. B. Clark	М М М
Gun sight supportJ. F. Meigs et al. Guns, Sighting telescope for	Me Me
Gun having a recoiling barrel, Field	М М М
Hair picking machineG. M. Morgan Hame and trace connector	M M
Hair in pup, Securing natural or artheration. L. Kubelka Hair picking machine	М
power	M Na
Handcuff and like lock	_ N(_ N(_ N)
Handle J. Markowitz Harrow, Rotary J. W. Elliott et al. Harvester attachment J. Pfeifle Harvester reel support H. J. Podlesaki Hat attachment G. W. Merritt Hat sweat band J. H. Petigor Hay rake C. Pearson Heel and sole protectors, Machine for set- fing H. W. Winster	No
Hat sweat band	N1 - 00 - 01
Heel, Detachable. A. W. Carlson Heel nailing machine. B. F. Mayo	Oi Oi Oi
Heels, Machine for inserting nails in A. Bates Hinge	Oi
Heels, Machine for inserting halfs in	0s - 0s - 0s
chine for fixingE. Riebel Hoe and weed cutter, Combined Hoisting and conveying apparatus	12 12
Hoisting and conveying apparatusT. S. Miller	Pa Pa Pa
Homogenizing machineA. Tebbit Hoof trimmerL. H. Krickel	Pa Pa
Hose coupling and valve Combination	Pa Pa Pa
Hoisting and conveying apparatus. T. S. Miller Holding device	Pa Pa
Illuminating device	Pa Pa
Implement holder. D. B. Wing Infant's chair. L. E. Hansche Injector. D. W. Patton	Pe Pe
Insect catching means. R. A. Hampton Insect destroyer. II. E. Seibert Insulator. L. McCarthy Insulator bracket. C. G. Ette	Pl Pl
	Pi
Insulating for electric railway cars	Pi Pi
Internal combustion gas turble enginers. E. Atwell Ironing board. J. S. Adams Ironing machine, Shirt. W. Rartholomew Aburnal box. C. A. Lindstrom Key bolt. F. L. Il. Sims Keyhole guard W. E. Blais Kwife.	Pi Pi
Lournal box	P
Knitting machineA. C. Timming Knitting machine RibJ. D. Morley	I. I.
Knitting machine stop mation	P
Lamp and shade holder. Combined	P
Lamp burner. A. R. Boynton Lamp Electric. S. P. Wilbur	P. P. P.
Lamp, Locomotive cab	I. I.
Last supportO. Ashton Latch for sliding doors, Gravity E. Designding	I)
Lamp, Electric. S. P. Wilbur Lamp for motion picture machines. Lamp, Locomotive cab. C. P. Estes Last. A. M. Leighton Last support. O. Ashton Latch for sliding doors, Gravity E. Desjardins Lathe. W. L. Schellenbach Lathe. J. F. Webendorfer Lathe centering device, Mechanie's C. E. Jeck Lathe. Turret. B. M. W. Hanson Lavatory fixture J. H. Johnson Letter sheet S. J. Watson Leveling instrument I. L. Griswold Line support S. A. Roberts Lock B. S. Sensenig Lock F. E. Beunett Lock G. F. Reed	I, I,
C. E. Jeck Lathe, Turret. B. M. W. Hanson Layatory fixture J. H. Johnson	P P
Letter sheetS. J. Watson Leveling instrumentI. L. Griswold Line supportS. A. Roberts	Р
Lock. D. S. Sensenig Lock. F. E. Beunett Lock. G. F. Reed	P P
Lock G. F. Reed Locking device H. I. Owen Locomotive W. F. Buck Log rack O. F. Reeves	Р
	P P P
Loom controlling mechanism	P P P
Magnetic testing deviceL. J. Le Pontois	P P
Mail bag catcherE. Wieser Mail delivering apparatusJ. II. Mahle	P

	and the state of t
Iarking and spacing device. W. D. Adams Jeasurer. Skirt R. N. Firestone Jeasuring instrument W. H. Pratt	Rail joint. E. B. Matejke Rail snpport. E. F. Davis Rail tie and brace. J. Chambers, Jr.
Heasuring instrument, Electric	Rails, Supporting and protecting device for third
J. F. Martin Metal roll cutting machineG. Knaus Metal rolls, Machine for cutting	Railway, Pleasurel. McKay Railway railW. F. Traves
Metal working machine. B. M. W. Hanson detallic tie and rail fastening device	Railway signaling system (2 pats) H. W. Griffin Railway track tankE. D. Nelson Razor blade stropperI. Klein
J. F. Robinson Wilk can, Glass lined insulated L. R. Steel	Razor. Safety
Milk powder, AcidL. C. Merrell dilk, PreservingF. W. Howe Milking machines, Teat cup forA. Ridd	P. Gardner Refrigerating apparatus E. Dettmar Refrigerator door C. H. Boeck
Hill	Regenerator. S. A. Moss Register C. H. Veeder Register operating mechanism.
Moistener. J. F. Milner Molding apparatus. E. J. Vraalstad Molding machine. P. Wintz	W. I. Ohmer et al. Relay, Electric. L. J. Le Pontois Releasing device E. D. Chadwick
Monoplane	Respirator
Motor starting switchF. G. Dustin Mower, LawnC. W. Felker Mowers, Endless cutting apparatus for	F. J. Seabolt Rim, Separable demountable G. H. McClatchy Ring mold F. C. Widmann
Music instruction boardA. L. Stage Music sheet winding and rewinding mech-	Rocking chair. G. Mueller Roof structure, A. R. Kleinhans Rodary opening G. Brickley
anismG. W. and R. Paulson	Rotary engine J. Gougeon Rubber and the like, Manufacture of flexi- ble material from india A. T. Collier
pneumatically operated. R. Fromsdorf Nap plucking machineT. Mead, Jr. NecktieH. R. Winter Nest, Trap F. H. Sanborn	Rule, Slide B. T. Steber Sad iron, Gas heated W. S. Darley Sad iron, Solf heating. C. S. Konigsberg
Nitro bodies in shells, TreatingC. E. Bichel Note sheet guide, Perforated (Reissne)	Safety lock A. Frederiksen Salts of hydrated cupric oxid, Making
J. O'Connor Nut lock. 1. C. Woodward Odometer. C. H. Veeder	Sash bar for glass structures J. H. Beamish Saw mill, GangJ. L. Graham
oil burner, CoalO. Stanley bil containing medicine, Solid. O. B. May bil con attachmentI. Holdsworth	Sawing machine C. F. Gray Scaffold F. Magnuson Scaffold E. H. Phelps
Oiling device for cross heads, Automatic W. C. Schueler Oiling device for push rods of automobile	Scaffold, Portable (Reissue)A. II, McGhan Soribor W. Potter
engines, Automatic. A. C. Danver Dscillating engine. K. Moscicki Dven door K. Hottler	Searchlight shock absorberL. McNamee Seats, Back rest for machineE. Johnson Saff lubricating wheelT. G. Aultman
Oxid, Making nitrie. F. Hausser Package, Metallie. L. Bauroth Dackage of bottle caus &c. Tube.	Sewer pipe machine. J. H. Stewart Sewer trap. A. W. Cram
Packing case, Collapsible, E. S. Shepherd Packing device G. F. Steedman	Sewing machine finger guard. M. Mashbir
Packing for light sensitive layer carriers J. Schmuck Packing, Metallic	Shaft governor M. Kiblbeck Short metal can B. C. Egerton
Packing, Piston rod J. A. Bolch Paint, Mixed II. C. Pritchard Paper cutting device C. Sola	Ship or vessel
Paper, Device for handling scaling	Shuttle. C. Foliminer Shuttle, Hand threading. D. Brown et al.
B. B. Farnham Paper stock refining apparatus	Signaling apparatusG. F. Atwood Smoke consuming furnaceJ. F. Niesen Show shoved
Paste jar. A. G. Auchu Paving, Bituminous. G. P. Hemstreet Peat burner. F. Moench	Soap for paint, varnish, &c Bills Soldering machine, CanJ. A. Booth Solder of liquids and semiliquids, Appa-
Perfume mixture containing artificial musk, Solid	ratus for recovering the constituent L. C. and I. S. Merrell et al. Speed gearing, Frictional change of
Photographic developing tank	Sprayer D. B. Smith Spring wheel H. E. Stroud Spring wheel W. Van Niewkerk et al.
Piano action, Upright L. N. Soper Piano Automatie F. F. Stauffer Piano player actions, Accenting device for pneumatie J. W. Crooks	Spring wheel
Piano player treadle, Automatic E. T. Turney Piano playing mechanismC. W. Atkinson	Starch, &c., Manufacturing, E. O. Eckland Steam generator. J. Goodfellow Steam trap. G. Keisling
frano praying memanasang keyboard for	Steam (ra). Steel, Cellular. Steering gear connection. D. H. Buckley Stencil apparatus. J. F. Cole
ing for E. A. Parnell Picture frame form P. Duus Pile supporter J. S. McKnee	Stirrup
Piles or the like by means of gases, Apparatus for cuttingC. F. Gessert et al. Pipe thread protector (2 pats)	Stoker Feed methanism. P. L. Crowe Stoker, Furnace. P. L. Crowe Stoker mechanism. P. L. Crowe Stovepipe cleaner. A. A. MacLennan
Pipe wrench	Strainer. Feed waterA. B. Potts Street sweeping machineB. F. Gregory Strips, Machine for slitting reinforced.
Plaiting machine	Supporting braceW. Wait Sweeting machine. L. B. Hooker
Planter, CornS. K. Pennis Planter, Sugar caneF. Lojacono Planter, Wireless check row corn	Switch mechanism, Automatic
Planting mechanism, Corn. A. C. Lindgren Plow J. G. Page	Talking machine attachmentE. T. Condon, Jr.
Plow attachmentJ. E. Sheefel Plow, GrubE. J. Gardner et al. Pole attachmentL. E. Waterman	Tar, Treatment of acid
Power pressG. A. Ohl. Jr. Power registerC. L. Barnhart Pressing machines, Steam diffusing device	Telegraph register, Ink writingB. Hurd TelemeterA. Konig
for E. C. Grever Pressure indicating and recording apparatus W. H. Bristol	Telephone exchanges, Wiring system for
Printers' inking rolls and the like, Compound forG. Staunton Printers' lead and rule cutter	Telephone system, Party line. W. M. Bruee, Jr. Telephone transmitter. W. W. Dean
Printing blocks and stamps, Making A. J. Jarman Printing device, Intaglio and relief	Telephone transmitterF. Gottschalk Temperature regulating device
Dropellor H. W. Jacobs	Temperature regulating ventilator, Portable,R. E. Booraem Tennis nets or the like, Support for lawn.
Pump, Air	ThermostatI. F. and F. C. Beers Thermostat, ElectricalW. P. Allen Tie plateJ. M. Sellers
Pump, Air. P. Sehon Pnmp for vacuum systems, Rotary. A. Wester Pump, Oil J. B. Davis	Tile plate
Pump, Oil	Tire grip A. F. Bergin Tire holder F. S. Garrett Tire plng

man fig. 4 to 2	
ail joint. E. B. Matejke ail support E. F. Davis ail tie and brace. J. Chambers, Jr. ails, Supporting and protecting device for third G. S. Inman ailway crossing. J. B. Dunnlap ailway, Pleasure. J. McKay ailway rail. W. F. Traves ailway signaling system (2 pats). H. W. Griffin ailway track tank E. D. Nelson azor blade stropper I. Klein azor. Safety S. Adler eamer, Expansion E. Fereneik celed merchandise, Holding device for P. Gardner efrigerating apparatus E. Dettmar efrigerator door C. H. Boeck egenerator S. A. Moss egister C. H. Veeder egister operating mechanism W. I. Ohmer et al. edgy Electric L. L. Le Pontais	
ail tie and braceJ. Chambers, Jr. ails, Supporting and protecting device for third	
ailway crossing. J. B. DnnIap	
ailway rail	
ailway track tankE. D. Nelson	
azor blade stropper	
celed merchandise, Holding device for P. Gardner	
efrigerating apparatusE. Dettmar efrigerator doorC. H. Boeck	
egeneratorS. A. Moss egisterC. H. Veeder	
egister operating mechanism	
eleasing deviceE. D. Chadwick espiratorD. D. Barnum	
heostat, Starting and speed regulatingF. J. Seabolt	
egister operating mechanism	
ocking chairG. Mueller oof structureA. R. Kleinhans	
otary engine	
ble material from indiaA. T. Collier	
ad iron, Gas heatedW. S. Darley ad iron, Self heatingC. S. Konigsberg	
afety lock	
ash bar for glass structures J. H. Beamish	
aw mill. Gang. J. L. Graham awing machine. C. F. Gray	
caffold F. Magnuson caffold E. H. Phelps	
ash bar for glass structures. J. H. Beamish aw mill, Gang. J. L. Graham awing machine. C. F. Gray caffold. F. Magnuson caffold. E. H. Phelps caffold, Portable (Reissue). A. H. McGhan criber. W. Potter earchlight shock absorber. L. McNamee eats, Rack rest for machine. E. Johnson elf lubricating wheel. T. G. Aultman ewer pipe machine. J. H. Stewart ewer trap. A. W. Cram ewing machine bobbin winder. ewing machine finger guard. M. Mashbir ewing machine looper mechanism. G. E. Molyneux haft governor. M. Kiblbeck	
earchlight shock absorberL. McNamee earts. Back rest for machineE. Johnson	
elf lubricating wheelT. G. Aultman ewer pipe machineJ. II. Stewart	
ewer trap	
ewing machine finger guard. M. Mashbir	
haft governorM. Kiblbeck	
heet metal can. B. C. Egerton hip or vessel G. E. Elia	
hoe stiffeners, ProducingW. B. Arnold buttleC. Pommier	
haft governor	
ignaling apparatusG. F. Atwood moke consuming furnaceJ. F. Nieser now chovel	
now shover oap for paint, varnish, &cC. Ellis oldering machine, CanJ. A. Booth	
olids of liquids and semiliquids, Apparatus for recovering the constituent	
peed gearing, Frictional change of	
prayer. D. B. Smith pring wheel. H. E. Stroud	
pring wheelW. Van Niewkerk et al. tamp. HandA. D. Joslin	
peed gearing, Frictional change of. L. C. Arnaud prayer. D. B. Smith pring wheel. H. E. Stroud pring wheel. W. Van Niewkerk et al. tamp. Hand. A. D. Joslin tamping machine, Check controlled Clarch, &c., Manufacturing, E. O. Eckland team generator. J. Goodfellow team trap. G. Keisling teel, Cellular J. M. Rude teering gear connection. D. H. Buckley teering apparatus. J. F. Cole	
team generator. J. Goodfellow team trap. G. Keisling	
teel, CollularJ. M. Rude teering gear connectionD. H. Buckley	
stericil apparatus	
toker feed mechanism. W. C. A. Henry toker, Furnace L. Crowe	
toker mechanismP. L. Crowe tovepipe cleanerA. A. MacLennan	
steering gear connection. D. H. Buckley stencil apparatus. J. F. Cole stirrup H. B. Cox. stoker feed mechanism. C. D. Young stoker feed mechanism. W. C. A. Henry stoker, Furnace. P. L. Crowe stoker, Furnace. P. L. Crowe stoker mechanism. P. L. Crowe stoker mechanism. P. L. Crowe stovepipe cleaner. A. A. MacLennan strainer, Feed water. A. B. Potts street sweeping machine. B. F. Gregory strips, Machine for slitting reinforced. W. A. Brownrigg supporting brace. W. Wait sweeping machine. L. B. Hooker switch mechanism, Automatic. R. D. Johnston, Jr.	
Supporting braceW. A. Brownrigg	
weeping machine	
Switch operating rod, Electric	
'alking machine attachmentE. T. Condon, Jr.	
ar. Treatment of acid	
Varget garrier A. A. Stillman	
.W. O. T. Van Tienen Carget carrier A. A. Stillman Calcarder register, Ink writing B. Hurd Calcarder A. Konig	
. W. O. T. Van Tienen Carget carrier . A. A. Stillman Celegraph register, Ink writing . B. Hurd Celemeter . A. Konig Celephone dials, Sign holder for	
. W. O. T. Van Tienen Carget carrier. A. A. Stillman Celegraph register, Ink writing. B. Hurd Celemeter. A. Konig Celephone dials, Sign holder for. R. H. Gerard Celephone exchanges, Wiring system for automatie. F. R. McBerty Celephone system Party line	
W. O. T. Van Tienen Carget carrier. A. A. Stillman Celegraph register, Ink writing. B. Hurd Celemeter. A. Konig Celephone dials, Sign holder for. R. H. Gerard Celephone exchanges, Wiring system for automatie. F. R. McBerty Celephone system, Party line. W. M. Bruee, Jr. Celephone transmitter. W. W. Dean	
W. O. T. Van Tienen Varget carrier A. A. Stillman Velegraph register, Ink writing B. Hurd Velemeter A. Konig Velephone dials, Sign holder for R. H. Gerard Velephone exchanges, Wiring system for automatie F. R. McBerty Velephone system, Party line W. M. Bruee, Jr. Velephone transmitter W. W. Dean Velephone transmitter F. Gottschalk Vemperature regulating device	
weeping machine	
Comperature regulating ventilator, Portable, R. E. Booraem	
Comperature regulating ventilator, Portable, R. E. Booraem	
Comporatore regulating ventilator, Portable,	

Tire. Spring J. W. Graham Tobaceo pipe attachment . E. H. Ziebarth Tool, Pressure fed A. Ball Tool, Pressure fed G. H. Gilman Tooling device for stone and the like
n
Train order device, Duplicate
Tripod with hinged legs. F. Myer Trolley control system. F. E. Case Trolley wheel. L. J. Tetlow Trousers. H. Jacobs Truck Car. W. H. Hellings, Jr.
Truck, Car W. S. Adams Trunks and the like, Suspension fixture device for C. T. and E. T. Wilt Truss W. H. Allen Tug, Harness J. C. Semler
Turbine, Gas
Twine machine, GrassO. T. Waite Type disk supporting deviceJ. Steel Typewriter operating mechanismT. A. McCall
Typewriting machineJ. II. Barr Typewriting machineO. Woodward Umbrella, Walking stickI. M. Hoppenstand Undershirt T. Fanta
Underwear, Union
Valve
Valve, Reversing. H. E. Schild Vehicle. A. A. Mutsehler Vehicle fender, Motor. E. K. Conover Vehicle, Motor. D. J. McOsker Vehicle, Motor. S. Stewart
Vehicle wheel
ing rotative. F. F. Stanffer Vending machine. J. F. Dixon Vending machine. G. J. Tubergen Vencer-sizing machine. J. H. Totten Vessel, Marine. H. R. Henderson
Vibrating cup. W. E. Snyder Violin bow. T. Knrth Vise. H. S. Kuhn Vise, Turret. H. S. Knhn Wagon box fastener. H. E. Bart
Wagon box lifter of rack lack
Warp stop mechanism, Shipper releasing mechanism for electrically controlled C. D. Hanning Washing machine. B. J. and W. L. Harrell Washing machine. B. J. and W. L. Harrell Washing machine.
Water closet E. G. Watrous Water elevator, Compressed air
Wagon rack standard. O. H. Davidter Wall plng or socket. A. D. Caywood Warp stop mechanism, Shipper releasing mechanism for electrically controlled C. D. Hanning Washing machine. B. J. and W. L. Harrell Water carrier. E. I. Offntt Water closet. E. G. Watrous Water elevator, Compressed air. F. P. Callow Water gage. T. F. Fitzgerald Water heater. C. A. Borein Water tank. C. H. Miller et al. Watering trough Mansfield Wave trains by means of primary spark circuits, Producing of continuous. R. C. Galetti Web folding machine. C. T. Cundall Welding, Electric seam. M. J. Farquhar Well drilling machine.
Web folding machineC. T. Cundall Welding, Electric seamM. J. Farquhar Well drilling machineH. A. and A. M. Thomas Wells, Fishing tool for oil or other.
Welding, Electric seam. M. J. Farquhar Well drilling machine. H. A. and A. M. Thomas Wells, Fishing tool for oil or other
Wine drawing machine E. H. Carroll Wrench J. Sherbine Wrench M. Istvan Wrench E. Allen
Yarn or thread, Apparatus for gassing J. B. Bolton Issued August 22, 1911.
resuch mugust an result.

MECHANICAL PATENTS.

Aerobatic performances, Apparatus for...

Amalgamator, Concentrating
Amalgamator, Concentrating
Anthraquinone series and making same,
Product of the F. Ullmann Automobile M. B. Morgan
Automobile eranking device, Electric E. A. Scott
Automobile hornF. Vsetecka
Automobiles and the like Bracket holder
forW. A. Schleicher
Bail making machineD. E. Kempster
Balancing device
Bath tub supply and waste
Bearing for shafts, Adjustable
Bearing, SpringA. M. Karns Bearing support or bracketF. Rohrbeck
Bed covering Sonntag E. G. Kanelman
Bed, Invalid. G. H. Stone
Bed, Wall
Beet topper R. E. Mnrphy
Belt shifter. Automatic II. B. Lane
ter containing
Beveling machine, OvalW. E. Browne Binder, Loose leafW. C. Loud
Biuder or loose sheet holder, TemporaryG. P. Wigginton
Bit holder E. J. Elsas
Amalgamator, Concentrating Anthracene compounds and making same. Anthraquinone series and making same, Product of the F Ullmann Automobile M. B Morgan Automobile eranking device, Electric. E. A. Scott Automobile horn F. Vsetecka Automobile signaling mechanism. Automobiles and the like, Bracket holder for W. A. Schleicher Axle. B. A. Carlsen Bail making machine. D. E. Kempster Balancing device. A. M. Collins Barrel filler. A. B. Carl Bath tub supply and waste. Bearing for shafts, Adjustable. Bearing Spring. A. M. Karns Bearing support or bracket. F. Rohrbeck Bed covering. A. Sonntag Bed frame. F. G. Kapelman Bed, Invalid. G. H. Stone Bed, Invalid. G. H. Stone Bed, Invalid. H. C. Mulvaney Beet digger. N. Johnson Beet topper. R. E. Mnrphy Belt shifter. G. Williamson Belt shifter. Automatic. H. B. Lane Beveling machine, Oval. W. E. Browne Binder, Loose leaf. W. C. Loud Biuder or loose sheet holder, Temporary. G. P. Wigginton Bit holder. E. J. Elsas Blind, Venetian Boiler washout and refilling system. F. W. Miller Bollers, Steam superheating apparatus for Jocomotive. J. Primrose
Boiler washout and refilling system
Boiler washout and reining system. F. W. Miller Boilers, Steam superheating apparatus for Jocomotive
Bolt and lock nutD. J. Diehl
Bolt and lock nut D. J. Diehl Bonbon stamping presses, Feeding device for C. Rost Book, Loose leaf C. Forgerson
Book, Loose leafC. Forgerson Books, BindingH. P. Brown
Books, files, and temporary binders. Cover for loose leaf
Boots and shoes. Machine for setting heel
Bottle closure, MilkP. Piatek
ing
Bottling machine J. II. Champ
Box cover tastener
Box making machine
Brake beam fulcrumC. L. Schwartz Brake shocF. W. Sargent
Brake systems, Safety signal device for fluid pressureW. II. Sauvage
Books, Loose leaf. C. Forgerson Books, Binding. H. P. Brown Books, files, and temporary binders, Cover for loose leaf. J. Walker, Jr. Boots and shoes, Machine for setting heel and sole protectors for. H. W. Winter Bottle closure, Milk. P. Piatek Bottles, Nipple retaining device for nurs- ing. D. M. Syme Bottle, Non refillable. S. O. Stanieh Bottliug machine. J. H. Champ Box cover fastener. F. W. Dobbel Box making machine. W. R. Comings Box, making machine. J. Staderini Braiding machine. F. Thun et al. Brake beam fulcrum. C. L. Schwartz Brake shoe. F. W. Sargent Brake systems, Safety signal device for fluid pressure. W. H. Sauvage Brush and mop holder, Combined. J. O. Beazley
Brush cutterR. G. Mitchell Brush machine G. S. Murdock
Buckle
form for R. O. Blayney
ing. Device for coolingII. Jachisch
Cableway. T. S. Miller
Calipers and dividers
Camera, PhotographicJ. Goddard
Camera, Revolving backJ. Goddard Camera shutters and means for operating
the same
Car brake
Car door track and hanger, Combined
Car, DumpingJ. II. Baisden, Jr.
Car grain doorF. W. Hugunin
fluid pressure. W. II. Sauvage Brush and mop holder, Combined. J. O. Beazley Brush eutter. R. G. Mitchell Brush machine. G. S. Murdock Buckle. L. P. Faison Building tubular structures. Adjustable form for. R. O. Blayney Bung rings of transport casks during pitching. Device for cooling. II. Jacnisch Bunion protector. Q. E. Packard Cableway. T. S. Miller Calipers and dividers. W. A. Peck Calipers, Micrometer. F. Spaulding Calipers, Poising. J. E. Campe Camera, Photographie. J. Goddard Camera, Photographie. J. Goddard Camera shutters and means for operating the same. L. C. Knee Can opeuer. N. II. McPeak Car brake. F. M. Blake Car door track and hanger, Combined. Car door track and hanger, Combined. E. A. Hill Car, Dumping. J. H. Baisden, Jr. Car fender. N. J. Spencer Car grain door. F. W. Hugunin Car moving device, Railway Car standard. S. Mitchell et al. Car steplacer. J. A. Moynihan Car steplacer. J. A. Moynihan Car steplacer. J. A. Moynihan Car steplacer. J. A. Moynihan Car steplacer. J. A. Moynihan Car standard. S. Mitchell et al. Car steplacer. J. Kinzman Car steplacer. J. Kinzman Car steplacer. J. Kinzman Car steplacer. J. Kinzman Car steplacer. J. Kinzman Car steplacer. J. Kinzman Car steplacer. J. Kinzman Car steplacer. J. Kinzman
Car roof (Reissue)J. Pearson
Car step. Folding J. Kinzman
control thereof. Apparatus for governing
Carrier H. L. Roberts
Cask or barrel, SeparableA. A. Taylor
Casket carrier and decoration, Burial L. H. Montross
for
Cattle guardB. H. Herman Cement, MakingC. Ellis
Chair E. G. Beers Chair E. G. Sebring
Chimney cowl and ventilatorF. Riemer Circuit controlling systemJ. H. Hall
Clay, kaolin, and ceramic masses. TreatingG. Keppeler et al.
Clevis
Cloth pressing and finishing iron
Car roof (Reissue) J. Pearson Car standard S. Mitchell et al. Car step, Folding J. Kinzman Cars or vehicles along a railway and the control thereof, Apparatus for governing the passage of W. P. Nuebert Carrier H. L. Roberts Carton setting up machine .F. J. Heybach Cask or barrel, Separable A. Taylor Casket carrier and decoration, Burial L. H. Montross Casting metal under pressure, Apparatus for S. Enomoto Cattle guard B. H. Herman Cement, Making C. Ellis Chair E. G. Beers Chair E. G. Sebring Chimney cowl and ventilator F. Riemer Circuit controlling system J. H. Hal Clay, kaolin, and ceramic masses, Treat- ing G. Keppeler et al. Clevis L. D. Bell Clock striking mechanism E. Towns Cloth pressing and finishing iron R. W. Hull Clutch, Friction F. H. Ogden Clutch, Transmission friction E. C. Grizzel
Coal of high activity Manufacturing
Cook Stop
Coffee pot, ReversibleE. Zimmerman
Coke quenching apparatusD. McDonald
Compass, Beam H. R. Olson Compass, Marine
Clutch, FrictionF. H. Ogden Clutch, Transmission frictionE. C. Grizzell Coal of high activity, ManufacturingF. Richter Cock, Stop
Concrete brick and block molding appa-

6 4 11 14	. 4	, de 4000 -	a diam	1 444.72
		13	Cuttonia	ee G
Concrete dam		//.	S. Morte	on G
Concrete, Reinford	ed	\cdots	'. F. Sco Anderse	ott G on G
Conveyor, flight, (Chain	J.	W. Turn	er G on G
Conveyer, Refuse. Copying machine.	Multi.	i:	C. Stale	он С ey G
Core barrel	mont	\dots P.	M. Reil	ly G rd G
Cotton sweep			V. Port	er G
Coupling ring Cover and dish d	rainer,	Combin	1. Coop ation	er G
Cross tie		11	i. Grease T. Andre	on G w G
Cultivator		B. 1	II. Philli	ps G
Cultivator standa.	ra amac	W. F.	Hamilte	on G
Culvert, Corrupate Curtain pole ring	:d	C	`. J. Fel . F. Lat	an G
Curtain rod holder		. P. R.	Sledge, J E. Nicku	fr. G m G
Damper, Stove		P.	K. Swe	ect G
ratus	breakir	ng up	the fibe	rs G
of ramie, cara Machine for	guata.	sansevi	ieria, & E. Cono	c., G re G
Dental appliance.		C. W	. Davise for a ted.	on G
Decorated article- Decorated article- Decorated and of ramie, cara Machine for Dental appliance. Designs, Making Directory, Loose Dish washer and Display frame Display frame Display frame display stand and Dissolving view and window Door closing apparates apparates to be apparently of the proof of the proof. Metallic display frame Draft rigging, Tarafting instrumed Drinking tube Drinking tube Dye, Yellow disa	F	. W.	Derbyshi	re G
Directory, Loose Dish washer and	draine	r	C. Dam.	<u>G</u>
Display frame	. Т. and И. И. а	l O. F. nd II.	McHarg T. Hipw	ue G ell E
Display stand an	d carrie	r, Com	bined	i i
Dissolving view 8	ipparatu	s	H. Krieg	ger ek I
Door and window Door closing appa	guard. ratus	W. I	H. Asmo Duggen, J	lr. I
Door hanger, Slidi	ing:	E.	P. Gold M. Sincl:	en 1. uir
Draft rigging, Ta	indem s	pring.	E Eway	I
Drafting instrume	nt	M.	II. Star	ke I
Drilling device		. R R. N.	Sanders Parente	on I au I
Dye and making	same,	Disazo	L Las	I
Dye, Yellow disa	zo		Want of	al I
Dyestuff, Bluish-r	ed azo.		zart et	aı
Dye, Yellow disa Dyestuff, Bluish-r Dyestuff, Green to Earth loading d Egg separator. Egg-shake making Elastic wheel. Electric switch. Electric terminal	K. S o black	chirma vat	cher et	al. I
Forth loading d	K. S	chirma Portabl	cher et	al. I
Earth loading of	·····		.W. Moc	ore 1
Egg separator Egg-shake making	appara	tus	. W. BHU	oss I
Electric switch		ii	A. Ang . R. Hi	gst 1 rst 1
Electric terminal	contact.	\V.	E. Russ	tell I
Electricity by ch	emical :	means,	Apparat	us I
for generating. Electrocuting trap	IE.) II.	N. Hue Hertz	ison et berg et	al. I
Electrolytic cell	witch	II.	S. Hatfie W. Shee	old I hy
Electrometallurgic	al produ	icts, T	reating	on
Electric switch. Electric terminal Electrical pull so Electrical pull so Electrocating trap for generating. Electrouting trap Electrolytic cell. Electromagnetic selectromagnetic selectromagnetic selectromagnetic selectromagnetic selectromagnetic selectromagnetic selectromagnetic selectromagnetic selectromagnetic Electromagnetic Engine controller, Engine starter. Engine starter. Engine starter. Engine starting Engine starting Engine starting Engine starting Engine starting Engine starting in Engine steering in Engine steering in Engine steering in Excavating and Excavating and Excavating dipper Explosive engine. Eyeglass mountin Eyeglasses mountin Eyeglasses mountin Faucet. Antiseptification freed blending ma Feed water purifification. Feed blending mechanis Fence post. Fertilizer. Ammon	egulator	for pl	unger	
Enamel, Making I	mottled.	J.	H. Dany	ren
Engine controller, Engine starter	Gas		W. L. G H. Jaco	ile obs
Engine starter	dorico	W. Evplosi	S. Johns	on
Engine starting	device,	Explosi	.H. Gle	nn
Engine starting de	evice, In	ternal S.	T. Recy	on. Ves
Engine starting to	mechanis	sm. Int	${ m C. \ }\Lambda. { m \ }{ m D}$	eal
Engine steering n	nechanisi	m, Trac	ction	9.1
Engines, Cooling	tank fe	or expl	osive	
Etching apparatus	.11. A. s	B.	man et C. Hilla	ard
Excavating and	loading	appara	itus E. Burk	ett
Excavating dipper	·	7. S. M	cKee et	al.
Eyeglass mountin	g	G.	J. Low	res
Eyeglasses and sp Eastening inserting	ig mach	ine	w. ji. c	uff
Faucet. Antisepti			A. Schr	atz 1011
Feed blending ma	chine		J. A. Cr C. H. C	aig ort
Feeding mechanis	m (2)	pats)	t Sulliv	
Fence post		J.	A. Johns	son
Fertilizer, Ammor	nium ph	osphate N.	Caro et	al.
[Cilsone 0.237] 190.05 C	111271110 1	22 22 6 6 12 12 6	oe Viach	110 O
for opening and	d cleanii	ng (2 j	eats)	ite
for opening and Fibers, Obtaining Filament mounting	textile.	.F. Kı	eisel ct	al.
Filament mounting Filament support Filament support Filaments. Manuf Filter, Air	18		II. Gilm	OLC.
Filaments, Manut	acture o C.	Λ^* to	n Welsba	ich
Filter, Air	extingu	II isher	. Torchi	ani
Fire escape		.P. B	Barrin,	ger ore
Fire hose reel		<u>C</u> .	E. Mer	Cel.
Fishing appliance Fishing rod hand	le		W. Up	ton
Fluid, Apparatus	for gene	rating G.	B. Ha	yes
Fluid ejector	Motive.		M. Lebla B. Ha	anc ves
Flying machine		J.	A. Blon	din
Fob	 _?	\dots s.	O. Big	ney
Folding and wra Folding chair	pping m	acnine.	N. Fryn	an nan
Food compound Food. Making car	(3 pats	s)J. J. J.	H. Kelle A. Croll	ogg oois
Food product	ronaring	J.	H. Kelle	ogg rds
Form. Garment	. E. T.	Palme	nberg et	al.
Fob. Folding and wra Folding chair. Food compound Food, Making car Food product. Food products. Form, Garment. Fruit extract and Furnace grate, Fnrrow cutter lu Fnse cap.	making	, ваше. .Е. G.	Ressenco	urt
Furnace grate,	Destruct	or J. T.	Fethers	ton
Fnrrow cutter lu Fnse cap	bricator.	F.	A. Wascl C. F. Sp	nka ery
•				

Game apparatus
Golf club. A. W. Biddle Governor, Speed regulating, W. H. Mursch Grain, Drying. W. E. Ellis Gramophone stop. R. E. Williams Grate. A. V. Davidson Grate. Chain. F. Girtanner Grinding machine attachment, Disk. F. X. and F. E. Gardner Grinding wheels, Device for dressing. S. W. Nesbitt
Guard bar
Harvesters, Spring guard attachment for corn. J. H. Breen Hat bodies jointly, Napping. F. J. Muhlfeld Hat pin guard. C. L. Mitchell Hat pin point protector. G. G. Hay Hats on the heads of the wearers, Device for retaining ladies'. A. Good Headlight signal. M. W. Hampton Heel and sole protectors for boots and shoes, Machine for setting. H. W. Winter Heel breasting machine. A. Bates Hematite to magnetic iron oxid, Reducing. S. Lilja
Hinge J. K. Wirkellan Hinge F. C. Grosskopf Hinge R. W. Hubbard Hinge C. W. Bade Hinge, Flask J. C. Goodale Horn, Signaling A. A. Kent Horseshoe calk or creeper attachment. J. J. Connor
Horseshoes, Antislipping attachment for L. P. N. Smith Hose coupling implementD. D. Strong Husking apparatusC. O. Blee et al.

Hydraulic motor. W. S. Tierriner. Hydrocarbon burner. H. C. Re Hydrocarbon generator. H. A. R. Ice box, Scale. I. O. Neven Ice creeper. C. I. Westceepele. J. Filimon English. W. A. D Incisions in wood, sec. D. who for procusing continuous wavelke. G. B. instrinted in the procusing mechanism. E. A. W. Ice seen et al.
Indexing mechanism. F. A. W. Lee, sen et al. Ink well. W. H. Johnson Insulator protector. W. T. Goddard Internal combustion engine. G. Halloway Internal combustion engine.
Internal combustion engine. Internal combustion engine. A. M. Cleipint Internal combustion engine. S. Jachimovicz Ironing, Cloth folder for . H. C. Rand et al. Ironing machine. Jet apparatus. Jet akamp Jet apparatus. Jet akamp Jet apparatus. Jet akamp Jet apparatus. Jet akamp Jet
Lecithin from the seeds of lupines and other pulses, Extraction of II. C. Buer Lens grinding machine W. II. Johnson Level, Illuminated spirit I. f. McCullough Lid retaining mechanism
Life preserver. J. Strobel Lifting jack. A. Neal Limb, Artificial II. Connor Lime slacking apparatus. W. Schulthess Limekiln. P. McLoon Liquid meter. II. C. Alger Lock. A. Voigt Lock guard. T. J. McDonnell Locks, Strike plate for door. W. Samuelson Lubricating system. E. A. Rix Lubricator. E. Ryan Mail box. A. Rosenberg et al. Mail carrier, Automatic. J. Gronek
Lubricating system. E. A. Rix Lubricator. E. Ryan Mail box. A. Rosenberg et al. Mail carrier, Automatic. J. Gronek Mangle and kitchen table, Combined. M. Glass Manhole covers, Locking mechanism for M. Glass Manure spreader. S. K. Dennis Massage device, Hand operated C. M. Siebert Jr. (Continued in November Number)

IN EACH TOWN and district to ride and exhibit a sample Latest Model "Ranger" bicycle furuished by us. Onr agents every where are making money fast. Write for full particulars and special offer at once.

NO MONEY REQUIRED until you receive and approve of your bicycle. We ship to anyone anywhere in the U.S. without a cent deposit in advance, prepay freight, and allow TEN DAYS' FREE TRIAL during which time you may ride the bicycle and put it to any test you wish. If you are then not perfectly satisfied or do not wish to keep the bicycle ship it back to us at onrexpense and you will not be out one cent.

FACTORY PRICES We furnish the highest grade bicycles it is possible to make at one small profit above actual factory cost. You save \$10 to \$25 middlemen's profits by buying direct of us and have the manufacturer's gnarantee behind your bicycle. DO NOT BUY a bicycle or a pair of three from anyone at any price until you receive our catalogues and learn our unheard of factory prices and remarkable special offers to rider agents.

YOU WILL BE ASTONISHED when you receive our heautiful catalogue and study our superb models at the wonderfully low prices we can make you this year. We sell the highest grade bicycles for less money than any other factory. We are satisfied with \$1.00 profit above factory cost. Orders filled the day received.

SECOND HAND BICYCLES. We do not regularly handle second hand bicycles, but usually have

Orders filled the day received.

SECOND HAND BICYCLES. We do not regularly handle second hand bicycles, but usually have a number on hand taken in trade by our Chicago retail stores. These we clear out promptly at prices ranging from \$3 to \$3 or \$10. Descriptive bargain lists mailed free.

GUASTER-BRAKES, single wheels, imported roller chains and pedals, parts, repairs and equipment of all kinds at half the regular retail prices.

BUASTER-BRAKES SINGLE PROPERTY OF THE PROPE Self-healing Tires A SAMPLE PAIR The regular retail price of these tires is \$10.00 per pair, but to introduce we will sell you a sample pair for \$4.80 (cash with order \$4.55.

ROMORETROUBLEFROMPUNCTURES

Willsell you a sample pair for \$4.80 (cash with order \$4.55)

NOMORE TROUBLEFROM PUNCTURES

NALLS, Tacks, or class will not lot the air out.

A hundred thousand pairs sold last year.

DESCRIPTION: Made in all sizes. It is lively and easy riding, very durable and lined inside with a special quality of rubber, which never becomes por ous and which closes up small punctures without allowing the air to escape.

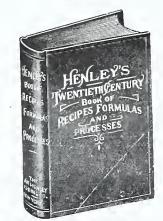
We have hundreds of letters from satisfied customers stating that their tires have only been pumped up once or twice in a whole scason. They weigh no more than an ordinary tire, the puncture resisting qualities being given by several layers of thin, specially prepared fabric on the tread. The regular price of these tires is \$10.00 per pair, but for advertising purposes we are making a special factory price to the rider of only \$4.50 per pair. All orders shipped same day letter is received. We ship C, O, D. on approval. You do not pay a cent until you have examined and found them strictly as represented.

We will allow a cash discount of 5 per cent (thereby making the price \$4.55 per pair) if you'send FULL CASH WITH ORDER and enclose this advertisement. You run no risk in sending us an order as the tires may be returned at OUR expense if for any reason they are not satisfactory on examination. We are perfectly reliable and money sent to us is as seafes in a bank. If you order a pair of these tires, you will find that they will ride easier, run faster, wear better, last longer and look finer than any tire you have ever used or seen at any price. We know that you will be so well pleased that when you want a bleycle you will give us your order. We want you to send us a trial order at once, hence this remarkable tire offer.

IF YOU HEED TIRES don't buy any kind at any price untilyou send for a pair of Hedgethorn Puncture-Proof tires on approval and trial at the special introductory price quoted above; or write for our hig Tiro and Sudrry Catalogue which describes and quotes all makes and kinds of tires from anyon

The Most Valuable Techno-Chemical Receipt Book Published

Henley's Twentieth Century Book of



RECIPES FORMULAS AND PROCESSES

Edited by GARDNER D. HISCOX, M. E.

Price, \$3.00 Cloth Binding \$4.00 Half Morocco Binding 800 large Octavo (6 x 9½) Pages.

Contains over 10,000 Selected Scientific. Chemical, Fechnological,
and Practical Recipes and Processes, Including Hundreds of
so-called Trade Secrets for every business.

To present here even a limited number of the subjects which find a place in this valuable work would be difficult. Suffice to say that in its pages will be found matter of intense interest and immeasurable practical value to the scientific amateur and to him who wishes to obtain a knowledge of the many processes used in the arts, trades and manufactures, a knowledge which will render his pursuits more instructive and remunerative. Serving as a reference book to the small and large manufacturer and supplying intelligent seekers with the information necessary to conduct a process, the work will be found of inestimable worth to the Metallurgist, the Photographer, the Perfumer, the Painter, the Manufacturer of Glues, Pastes, Cements, and Mucilages, the Compounder of Alloys, the Cook, the Physician, the Druggist, the Electrician. the Brewer, the Engineer, the Foundryman, the Machinist, the Potter, the Tanner, the Confectioner, the Chiropodist, the Manicure, the Manufacturer of Chemical Novelties and Toilet Preparations, the Dyer, the Electroplater, the Enameler, the Engraver, the Provisioner, the Glass Worker, the Goldbeater, the Watchmaker and Jeweler, the Hat Maker, the Ink Manufacturer, the Optician, the Farmer, the Dairyman, the Paper Maker, the Wood and Metal Worker, the Chandler and Soap Maker, the Veterinary Surgeon, and the Technologist in general.

Among the Recipes given are:

Bleaching, Etching and Engraving
Recipes for Glass Making, Paper Making
Recipes for Ointments
Mirror-Making Formulas
Paint Making Formulas
Gilding and Galvanizing Recipes
Bronzing, Tinning and Silvering Recipes
Recipes for Adhesives
Plating and Enameling Recipes
Cleaning Processes, Soap Making
Leather and its Preparation
Recipes for Alloys, Recipes for Solders
Photographic Formulas
Shoe Dressing and Stove Blacking Recipes
Rust Preventive Recipes

Recipes for Lubricants and Oils
Recipes for Dyes, Colors, and Pigments
Recipes for Dryers and Inks
Recipes for Artificial Gem Making
Jewelers' and Watchmakers' Recipes
Household Formulas
Waterproofing, and Fireproofing Recipes
Recipes for Cements, Glues, Mucilages
Recipes for Fireworks
Alcohol and its uses
Recipes for Essences and Extracts
Dentifrice, Cosmetic, and Perfume Recipes
Tanning Recipes
Metallurgical Formulas
Hair Restorers, and Depilatories

And many thousands more-Equally Important in the Arts and Manufactures

A GREAT BARGAIN \$1.75 Value for \$1.00

One Year's Subscription for McCall's Magazine, Any 15-Cent McCall Pattern you may select, One Year's Subscription for The Inventive Age.

ALL FOR ONLY

\$1.00









McCall's Magazine

Is a large, artistic, handsomely illustrated hundred-page monthly magazine. It contains sixty new Fashion Designs in each issue. Every woman needs it for its up-to-date fashions, entertaining stories and complete information on all home and personal topics. Over one million subscribers. Acknowledged the best Home and Fashion Magazine. Regular price, 5 cents a copy. Worth double.

McCall Patterns

Are so simple you cannot misunderstand them. Absolutely accurate. In style, irreproachable. You may select, free, any McCall Pattern you desire from the first number of the magazine which reaches you. Regular price, 15 cents.

The Inventive Age.

A journal of manufacturing industry and scientific progress. The indispensable paper for patentees. Contains matter and information not found elsewhere. Regular price, \$1.00 per year.

Address: THE INVENTIVE AGE Publishing Co., Washington, D. C.

The DIAMOND

SELF-FILLING AND SELF-CLEANING Fountain Pen.

IT IS AWAY AHEAD
OF ANY OTHER PEN
MANUFACTURED BECAUSE OF ITS SELF
FILLING AND SELF
CLEANING FEATURES





Including one year's subscription to "The Inventive Age."

Price \$2.00.

No Lost Time.

No Soiled Fingers.

Address---

INVENTIVE AGE PUB'L. COMPANY, WASHINGTON, D. C.

SEND FOR OUR FREE CATALOGUE OF BOOKS FOR INVENTORS AND MECHANICS.



Vol. XXIII. No. 11. }

Washington, D. C.—November 1, 1911.

SINGLE COPIES 10 CENTS.

A REVOLUTION IN OIL ENGINES.

recently put on the market, and promises to effect basic changes in the generation of power. No ignition system either in starting or in operating is required in this new apparatus. No carburator, fuel mixer or heating device of any kind is used. The owner of the engine buys the cheapest oil the nearest refinery has to offer; he asks no questions except as to price. It is a liberal provision of nature that all grades of crude oil and their distillates have approximately the same number of heat units per pound -about 19,000 B. T. U. On the basis of two cents a gallon for fuel, adding the cost of an operating engineer and supplies, and figuring liberally for interest and depreciation, the cost of current produced by an Atlas oil engine is less than one cent per killowatt hour. The engine uses the cheapest, safest and most abundant fuel

known, and less of it than any other engine. It has the highest known efficiency, at the lowest cost for power. It develops a horse power on less than one-fifth the heat consumed by the average steam plant, and about onehalf of what is used by a producer gas

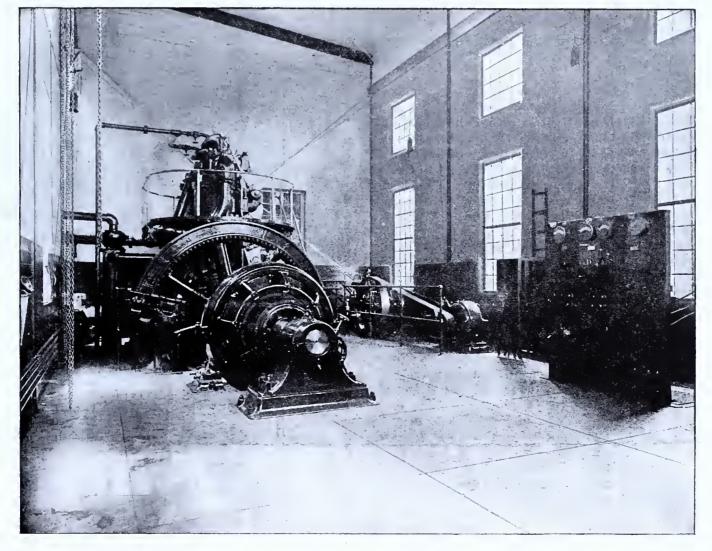
Something entirely new in the line of outfit. One pound of fuel oil in this engines—an internal combustion engine equals eight pounds of coal (not explosion) operated with crude under a boiler serving a simple oil costing about two cents per gallon; Corliss engine. Its construction does an engine in which air is compressed away with the explosions and shocks to a high temperature and generates that shorten the life of the ordinary heat to burn the fuel oil—has been engine: it also obviates wasteful

again, and it has many other advan- half of which goes up the chimney,

power plants are well recognized. Under favorable conditions, a steam plant consisting of a simple four Formany years power users have been valve engine, or a compound single

while the exhaust steam contains over The economic limitations of steam sixty per cent of the original heat, the rest of the loss being due to friction. leakage, radiation and condensation. trying to get greater efficiency, and

> engineers have devoted much study to the subject, and have succeeded, by compounding four valve engines, using higher pressure and condensing apparatus, in raising the efficiency from six to nine per cent. In large powers, through the use of automatic draft and stoking and other appliances, the waste was reduced to a fraction over eighty per cent, and the useful effort raised to nearly 18 per cent, which corresponds to a steam consumption of 14 pounds per brake horsepower per hour. This is the highest efficiency attainable, under test conditions. Steam turbinesareslightly more economical in the large sizes, reaching a possible efficiency of twenty per cent. In spite of the highest refinements of engineering, therefore, the practice of burning fuel under a boiler to evaporate water, and conveying the resulting



COMPLETE INSTALLATION OF 300 B. H. P. ATLAS OIL ENGINE, DIRECT CONNECTED TO 200 K. W. ELECTRIC GENERATOR.

stoking, danger of boiler explosions, shut downs for cleaning and repairing boilers, and the time lost in getting up steam. It effects economy in the circulating water required, as it takes only about three gallons per B. horsepower hour, used over and over

valve automatic cut off engine, supplied by horizontal tubular or water tube boilers, will convert into power only a fraction over six per cent of the heat value of the coal burned under the boiler. About thirty per cent is lost at the boiler, more than

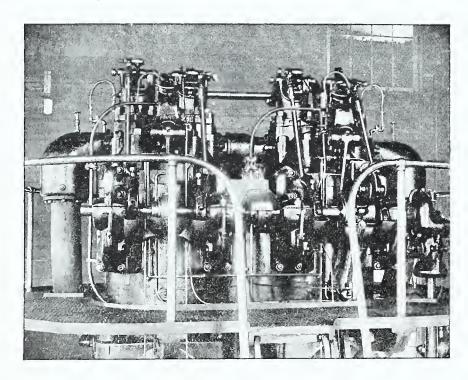
vapor through pipes to a reciprocating engine or a steam turbine, is so wasteful that in the very largest and best equipped plants, not less than eighty per cent of the fuel energy is lost, while in smaller establishments over ninety per cent is wasted. Care-

ful tests of both steam (Corliss) and of this new type of oil engine show there is a saving with the latter of 80 per cent in fuel cost, the oil engine as the steam plant while doing the same work during a given period of continuous operation. Experiments with producer gas engines show a saving of 46.4 per cent in fuel cost in favor of the oil apparatus, the latter consuming a little more than one-half as much heat as the former.

In every other type of oil or gas engine, a practically complete mixture of gas or fuel vapor and air is ignited, and the flame spreads through the

compress each suction charge of pure air to the pressure to which the ignition temperature is normal must be returned to the shaft during the consuming only one fifth as much heat following working stroke, less only the loss due to friction. This is one of the simple things that contribute largely to economical performance.

> The Atlas oil engine works on the four-stroke cycle. On the first downward stroke of the piston, pure air only (and not an explosive mixture) is drawn into the cylinder. On the first upward stroke this air is compressed into a small clearance space between the piston and the cylinder head. No combustible mixture exists



VIEW ABOVE DECK.

entire mass almost instantaneously. There results a consequent sudden rise of several hundred pounds pressure and a corresponding increase in temperature. The heat generated is, therefore, all added to the mass at once, before it has time to expand, and this is what constitutes an explosion which, occurring at each working stroke of each cylinder, subjects all parts of the engine to rapidly recurring vibratory stresses of irregular and often excessive magnitude, which lead to its early destruction, as even the best metals must eventually yield to continued abuse. In the Atlas engine, air only is drawn into the cylinder. It is then heated by compression, and a fine spray of oil is injected into the cylinder, while the air is expanding. Combustion is gradual, no explosion whatever taking place. The pressure and temperature in the cylinder never rise appreciably above that due to the compression of the air to about 500 pounds on the first upward stroke. The impulse is, therefore, taken on and relieved gradually, so that the engine operates without shock. It therefore differs from all other types of internal combustion engines, inasmuch as the temperature necessary for ignition is obtained solely by compression of atmospheric air alone. No timer, magneto, hot plate or other ignition device is required, nor does it require a heater, vaporizer, carburetor or other fuel mixer, either to start or operate the engine.

It is obvious that the energy used to

in the cylinder during this stroke, and premature ignition, or back-firing is impossible.

The compression of the air to 500 lbs. pressure raises its temperature to about 1000 degrees Fahrenheit, sufficient to ignite the small amount and finely divided spray of oil which, thoroughly mixed with a jet of air at about 900 lbs. pressure, is gradually introduced through a small nozzle during about one-tenth of the second downward stroke, at such a rate that the temperature and pressure during the combustion period remain practically constant. Upon entering the hot air in the cylinder this spray of fuel oil, every globule surrounded by the air which atomizes it, burns steadily as fast as it is injected into the cylinder. About one-half of a cubic inch of oil (less than a thimble full) is burned in each 21 x 30 cylinder during each working stroke, the exact quantity being regulated in proportion to the load by a simple pump. the delivery of which is directly controlled by a powerful and sensitive governor. After the fuel valve closes, the gases work expansively and the terminal pressure is but slightly in excess of that of the atmosphere.

At the end of each working stroke the exhaust valve opens and the products of combustion are expelled on the second upward stroke, thus completing the cycle, which repeats itself in each cylinder during every two revolutions.

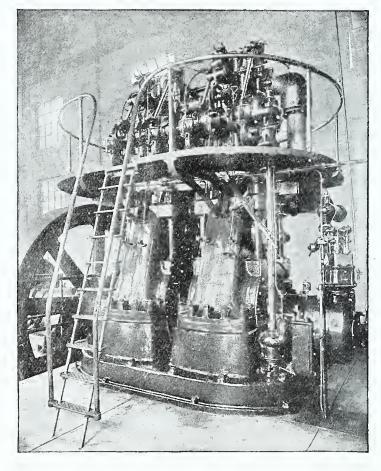
This engine is especially adapted to the use of crude oil and the least expensive products of distillation. It intermediate gears. The mechanism thoroughly consumes the carbon in which the heavier oils are rich, combustion being so perfect as to leave neither sediment, smoke or smell.

The oil most commonly used is known as "fuel oil," and is the residue after distillation of the lighter spirits and oil from crude petroleum as obtained at the wells. This oil averages 7.3 pounds per gallon and each pound represents 19,000 to 19,500 B. T. U., substantially the same as gasoline, which costs from four to six times as much. The cost of fuel oil may be a little more or a little less in other places, according to the distance from the oil fields and refineries, but at present it averages 2 cents and does not exceed 3 cents per gallon anywhere in the United States, except in extremely remote places. Furthermore, it is not likely that the increasing use of internal combustion engines will materially affect its cost for a long time to come, since the annual production of this grade of oil amounts to more than a billion and a quarter gallons, while approximately only 200 gallons are required for each brake horse power per 3000-hour year.

Practically 30 per cent of the total production of crude petroleum is suitable only for fuel oil, while 50 per cent is given off as kerosene, and only 10 to 15 per cent as gasoline, benzine and naptha, for which the demand for automobiles, motor boats, small farm engines and other purposes far exceeds the uses that have been found for the grade that constitutes fuel oil. It will thus be seen that the supply of

is not subject to shocks due to the valve gear, as in other oil engines. The fuel injection pump is of the twostage type. The first stage is directly controlled by the governor and serves to measure, at the last instant before the beginning of each working stroke, the exact quantity of oil that is to be admitted. This governing stage operates against pressure not in excess of the atmosphere, and is sufficiently sensitive in action to perform its important functions with the necessary quickness and accuracy. The speed can be controlled as closely as any steam engine, and the variation, under constant and changing load conditions, is less than in any other internal combustion engine.

This oil engine, which is manufactured by the Atlas Engine Works, of Indianapolis, is of the vertical, single acting, enclosed type. As seen in the accompanying illustrations, the base under each series of cylinders is a separate casting of the deep box type, massive and reinforced. It contains the housings for the main shaft bearings and is carried well up around the cranks. The "A" frame over each crank is cast in one piece with the cylinder and water jacket. It fits tightly on the base, completely covering the crank pit, and the upper end is arranged for rigid attachment of the cylinder head. The stresses in the cylinder are transmitted in straight lines to the base through four heavy steel rods running directly from the bottom of each cylinder to four heavily reinforced anchoring places



THREE QUARTER VIEW OF ENGINE FROM GOVERNOR END.

stantly increase, while the demand for it is comparatively limited. Low cost is a natural consequence.

Aside from its cheapness, the high flash-point of fuel oil recommends its use from the standpoint of safety.

The governor is driven directly from the main shaft, and there are no

this oil is abundant and should con- below the shaft bearings. These rods are of sufficient strength to carry the maximum stresses due to compression and ignition, and relieve the "A" frame of a liability to fracture from these causes. The main bearings are in halves, split horizontally. The main shaft is a solid forging of the highest grade steel, tested before

acceptance. The liner which constitutes the wall of each cylinder is cast separately from the cylinder itself, and is of a different mixture. The bodies of the cylinders are of tough fibrous iron, but the liner is made of fine grained charcoal iron as hard as it is practicable to machine, to withstand contraction and expansion, and be impervious to high pressure. The cylinder heads are of the same grained iron, and are water jacketed. The pistons are of the long trunk type, tapered at the upper ends to neutralize expansion. They are as light as possible, and being made of hard iron, there is little wear. The splash system of lubrication is used.

In a recent test, a two-cylinder, 300 B. horsepower engine was run night and day for a solid month, without stopping. Before the period was quite finished it was determined to run it another month, shutting down Sundays to determine whether allowing the joints to cool off and contract would affect the economy of the engine or its ability to start quickiy. It did neither, and during the entire sixty days no adjustments of any kind were made, other than what any operator could effect while the engine was running. At the end of the 1368 hours run, the pistons, cylinders and valve mechanism were in as good condition as at the beginning, and there was no perceptible wear on any of the bearing surfaces.

Fastest Motorboat.

Trials have lately been made on the Potomac River of a little motorboat which has developed remarkable speed. The Furlong, as this new marvel is named, made the record of 421 miles in an hour and two seconds, this latter including a turn. A feature of the boat is the balanced rudder, by which she is able to make turns at the same rate of speed at which she is traveling. This, together with the peculiar pitch and diameter of the oppositely revolving twin propellers, accounts to some extent for her speed, but it is the engines that are mainly responsible. There are two of these, six-cylinder, 125 horsepower engines, each with its cylinders cast in one piece and weighing but two and a quarter pounds for each horsepower developed.

The boat is built of aluminum, ash and oak, for the pounding of her powerful engines would be enough to open the seams on any ordinary craft. Her sharp keel extends but half the length from bow to stern, and the latter half of her is as flat as the proverbial board. When in full speed the bow rises from the water and she rides entirely on the flat part, the propellers buried beneath the waves.

How to Get Copies of Patents.

THE INVENTIVE AGE prints each month a list of the patents granted by the Patent Office. This list includes the name of the inventor, the title of the invention and the date of the patent. Anyone can procure through THE INVENTIVE AGE a copy of any patent included in the list, by giving the data and enclosing tencents in stamps for each copy. There is no better way of keeping yourself informed about the progress of the arts than by scanning the list each month and ordering copies of patents.

BIG MAIL SWINDLE.

Robert R. Stein, Known as "Homer A. Bell," Arrested for Using Mails to Defraud---Had Advertised Widely for Purchase of Patents.

In the March issue of the AGE, we called attention to the exposure of the patent selling swindle which had been in operation between Milwaukee and Washington by two brothers bearing the name of Stein; one Ernest Stein, who resided in Milwaukee, and the other Robert R. Stein, who lived in Washington.

The operations of Ernest and Robert R. Stein may not be familiar to all of our readers, so we will detail the salient points of their swindling scheme, which is regarded by the post-office inspectors as one of the cleverest in the history of crookdom.

R.R. Stein came to Washington from Milwaukee on June 18, 1910, and opened offices in the Ouray Building under the name of the American Estimating Company. The business of the company, of which Stein was sole manager, was to investigate the validity of patents. Stein's brother, Ernest A. Stein, about the same time organized a company in Milwaukee known as the Sheboygan Electric and Machine Co., the business of which was to purchase patents of all descriptions.

Ernest Stein advertised widely for the purchase of patents. When patents were submitted to the company, Stein would notify the inventors that in order to place the patent on the market it would be necessary to look into its validity. Stein would suggest the American Estimating Company, of Washington, as a reliable firm to make the investigation.

Robert Stein would charge his clients \$25 for searching into the validity of the patents. After the fee was paid the inventors would hear no more of their patents. Thousands of persons submitted patents to the Milwaukee company, and many communicated with the American Estimating Company in regard to their patents, upon the suggestion of Brother Ernest.

But the Post-office Department inspectors at Milwaukee discovered the scheme, and both Robert and Ernest were indicted on May 4, 1911, in the Federal courts of the Wisconsin city, charged with conspiracy in the use of the mails to defraud. Ernest was arrested and locked up. Robert received word of the indictments, and hastily left Washington, deserting his office, "jumping" his boarding-house, and leaving no directions as to forwarding his mail.

From Washington Stein went to Newark, N. J., where he opened offices at 425 Essex Building. He claimed to have patents for amusement devices of various kinds. Stein immediately organized a corporation, with a capital stock of \$125,000, and began selling stock. He then began advertising for the purchase of patents of all kinds, just as his brother had done in Milwaukee. When patents were submitted to them he would refer his clients to Homer A. Bell, a

In the March issue of the AGE, we fictitious personage, of Washington, alled attention to the exposure of the atent selling swindle which had been validity.

Stein then returned to Washington to collect the \$25 fees under the name of Homer A. Bell. But Stein began to fear that the post-office inspectors would discover him and place him under arrest, so, instead of opening permanent offices, he began dodging from place to place about the city. The inspectors had been searching for him since his escape from the city in May. Clarence R. Wilson, United States district attorney, aided in the search. At last it became known that "Homer A. Bell" was in the city, and the inspectors became more vigilant. Stein was traced from point to point, but he always managed to evade the officers.

Finally it was discovered that Stein was having his mail sent to a downtown bank. It was also learned that he had made arrangements with the elevator boy to receive the mail and to deliver it to him at stated times. So Hal B. Mosby and James B. Robertson, inspectors of the Washington division of the Postoffice Department, secreted themselves near the elevator in the bank building.

All day they waited, but Stein failed to make his appearance. But just about 6 o'clock they noticed a clever looking, well-dressed man approach the elevator boy and ask for his mail. The inspectors immediately jumped out and placed Stein under arrest.

"Mr. Bell" was taken to the First precinct station and locked up. All his actions point to the fact that he was expecting his arrest daily. At first he said that he was operating for another man, but he finally admitted the falsity of the statement. He refused to tell his name or age at first, but finally admitted that his name was Stein, and that he was the brother of Ernest.

A warrant will be sworn out for Stein, after which arrangements will be made for his removal to Milwaukee. He may be indicted here for conspiracy in the use of the mails to defraud in Newark and Washington. District Attorney Wilson is aiding in making arrangements in the case.

Stein is very loquacious, and is exceedingly clever. The success of his scheme up to the time of his arrest was due undoubtedly to his strong personality.

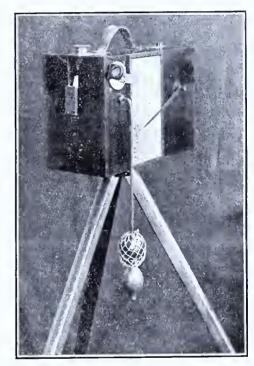
Aerial Mail Service.

The first air post established under government supervision was inaugurated in India, at the exposition of the united provinces of Allahabad. One of the well known English aeronauts obtained permission to establish a postal substation at the exposition grounds, and carried letters therefrom to the central postoffice at Allahabad, on the other side of the river. The service was beseiged with mails, as many assix thous and letters being carried on one trip. The postmark consisted of an aeroplane and the inscription, "First Aerial I" * Exposition of Allahabad, 1911."

UNIVERSAL PHOTOMETER.

The photometer can be used to measure the illumination derived from, or the candle-power of, a lamp of any nature under a large variety of conditions, such as in the test room, or in the street. It is not claimed that this instrument measures with such a degree of accuracy as to be of use for standardizing standard lamps, for the reason that the instrument itself depends for its operation on the substandard it contains, but for practical purposes, in the hands of an intelligent operator, it can be relied upon to measure within five per cent, either the illumination derived from, or the candle-power of, any lamp.

We place the degree of illumination first because all forms of photometers depend for their action upon comparison of the degrees of illumination of two surfaces. Therefore the instrument is calibrated in candlefeet, which reading it is only necessary to multiply by the squared distance of the photometer screen from the lamp under measurement, to reduce it from candle-feet to candle power.



The chief novelty of this instrument lies in the fact that it embodies a flicker disc, somewhat of the Whitman pattern, but rotated by a blast of air under the control of the operator. The result of this is that not only is it suitable for measuring types of lamps of which the spectrum varies considerably, but it is also a light, portable and inexpensive instrument, equal in efficiency to the clumsy and expensive apparatus so far available for the purpose.

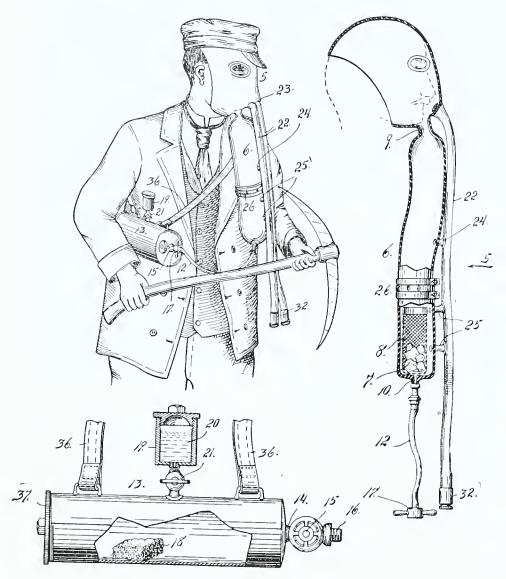
In order to make the instrument compact and easy to operate, the photometer bar and sliding lamp have been replaced by a reflecting screen with an angular adjustment. This is moved by means of a pointer attached to it, so that the balance can be rapidly obtained and the illumination read off direct from the scale. The dimensions and weight are such as to make the instrument quite portable, and, with the exception of the tripod, it is self-contained and always ready for use. For making a measuremen once the instrument is set up, all that is necessary is to rotate the sector disc by means of the air pressure bulb provided. The standard lamp having been lighted by inserting the plug, the pointer can be moved until the position is arrived at, when the operator, looking through the telescope, can see no flicker. The pointer will then read the illumination in candlefeet at that distance from the light, and at that angle of incidence indicated by the lens and sector on the edge of instrument.

CLEVER NEW PATENTS.

COMBINED RESPIRATOR AND PRESSURE EQUALIZER.—TOBACCO PIPE.

Combined Respirator and Pressure Equalizer.

Masks or face pieces connected with reservoirs of oxygen are familiar appliances for those engaged in safety work in mines, and for firemen, and a device of this character was invented by Wm. F. Merryman of Denver, Colo. a year or two ago. The inventor found, however, that a gas is sometimes encountered of such a nature that it penetrates the mask and enters the lungs of the wearer, and he has therefore patented an improvement on this device (assigning one-half to Philip Hoffman, of Denver) which consists of a pressure equalizing tank connected with the oxygen-producing bag and adapted to supply such pressure as to exclude the surrounding gas. It is an emergency device for use in connection with the other apparatus, and includes a tank of compressed air or containing a cake of oxone and a water receptacle. The combination of water with oxone generates oxygen, and the wearer can increase at will the atmospheric pressure within the respiratory bag and adjust his lungs to varying pressures of atmospheres or gases that cannot be breathed. The cuts show the mask and the respiratory bag connected therewith and also with the equalizing reservoir 13. One end of this reservoir has a pipe 14 in which is a valve 15, and which terminates in a

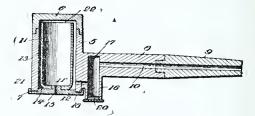


nipple connected by a screw coupling with the pipe 12. By opening the valve (normally closed) the respiratory chamber is placed in communication with the pressure tank 13, allowing small quantities of air to be let into the chamber 6 at suitable intervals. The apparatus has two flexible tubes 22, whose upper ends enter the mask and which also connect with the chamber 6, this chamber being composed of two parts coupled together. The lower ends of the tubes 22 have check valves which are mounted in a chamber formed at each end of the tubes. The valve is held in place by a screw plug communicating with the air. If the nature of the surrounding gas is such that it tends to enter the tubes of the apparatus, the valve 15 is opened, and air or oxygen under pressure from the tank enters the oxygen generating chamber so as to expel the noxious gas. The check valves close by moving up as the operator inhales. During exhalation the carbonic acid gas from the lungs passes out through the valved ends of the tubes before the check valves can move outwardly to their places. The other impurities from the lungs find exit under the edge of the mask, but nothing can enter through this avenue during inhala ion.

Tobacco Pipe.

A pipe which holds the tobacco so that it will not spill out, and which will prevent sparks or ashes being blown from the bowl, will appeal to all devotees of my lady Nicotine. The device, which has been patented by Wm. T. Kline, of Mifflinburg, Pa., has an arrangement for conducting the smoke to the mouthpiece from an outer casing. This latter is cylindrical in shape and has a closed top and an open, threaded, lower end. Passages lead from this casing to the stem. Within this casing is an inner bowl, the upper end open and the lower end detachably secured to a cap piece seated in the casing 5. The space between the bowl and casing forms a smoke passage, and at the junction of the bowl with the cap piece a pocket is formed, to receive part of the nicotine as the smoke passes through, and prevent clogging the duct 18 leading to the nicotine chamber 17. A draft opening 15 in the cap 12 allows the tobacco to be lighted. The inner walls of the chamber 17 (which connect also with the passage 10) are threaded to receive a removable cap, by detachment of which the nicotine in the chamber is removed. The duct 18 is so disposed that the smoke drawn

down through the passage 13 enters said duct without coming in contact with the nicotine in the pocket. The bottom of the bowl is detachable, so that when burned out it may be renewed, and the top can also be detached to clean the parts. When the tobacco is lighted, the smoke passes between the upper end of the bowl and the top,



thence downward and around the passage 13 to the duct 18, and thence through the chamber 17 and passage 10 to the mouthpiece. The space between the upper end of the bowl and the cap prevents the tobacco from being drawn down in the passage 13, and insures a uniform draft.

To keep themselves posted in the progress of the arts in which they are interested, inventors and manufacturers should subscribe for the IN-VENTIVE AGE, which publishes a list of all patents issued each month. The low subscription price and the character of the publication entitle it to the support of all the inventors of the country.



NO MONEY REQUIRED until you receive and approve of your bicycle. We ship to anyone anywhere in the U.S. without a cent deposit in advance, prepay freight, and allow TEN DAYS' FREE TRIAL during which time you may ride the bicycle and put it to any test you wish. If you are then not perfectly satisfied or do not wish to keep the bicycle ship it back to us at our expense and you will not be out one cent.

FACTORY PRICES We furnish the highest grade bicycles it is possible to make at one small profit above actual factory cost. You save \$10 to \$25 middlemen's profits by buying direct of us and have the manufacturer's guarantee behind your bicycle. DO NOT BUY a bicycle or a pair of tires from anyone at any price until you receive our catalogues and learn our unheard of factory prices and remarkable special offers to rider agents.

YOU WILL BE ASTONISHED when you receive our heautiful catalogue fully low prices we can make you this year. We sell the highest grade bicycles for less money than any other factory. We are satisfied with \$1.00 profit shove factory cost. Orders filled the day received.

SECOND HAND BICYCLES. We do not regularly handle second hand hicycles, but usually have number on hand taken in trade by our Chleago retail stores. These we clear out promptly at prices and the prices and the prices and the prices and the prices and taken in trade by our Chleago retail stores. These we clear out promptly at prices

We do not regularly handle second hand hicycles, hut usually have e by our Chicago retail stores. These we clear out promptly at prices

<u>00</u> Hedgethorn Puncture-Proof \$ f-healing Tires A SAMPLE PAIR TO INTRODUCE, ONLY

NO MORETROUBLE FROM PUNCTURES NAILS, Tacks, or Class will not let the air out. A hundred thousand pairs sold last year.

DESCRIPTION: Made in all sizes. It is lively and easy riding, very durable and lined inside with

riding, very durable and lined inside with a special quality of rubber, which never becomes porous and which closes up small punctures without allowing the air to escape. We have hundreds of letters from satisfied customers stating that their tires have only been pumped up once or twice in a whole season. They weigh no more than an ordinary tire, the puncture resisting qualities being given by several layers of thin, specially prepared fabric on the tread. The regular price of these tires is \$10.00 per pair, but for advertising purposes we are making a special factory price to the rider of only \$4.80 per pair. All orders shipped same day letter is received. We ship C. O. D. on approval. You do not pay a cent until you have examined and found them strictly as represented.

We will allow a cash discount of 5 per cent (thereby making the price \$4.55 per pair) if you send FULL CASH with ORDER and enclose this advertisement. You run no risk in sending us an order as the tires may be returned at OUR expense if for any reason they are not satisfactory on examination. We are perfectly reliable and money sent to us is as safe as in a hank. If you order a pair of these tires, you will find that they will ride easier, run faster, wear hetter, last longer and look finer than any tire you have ever used or seen at any price, we know that you will be so well pleased that when you want a hicycle you will give us your order. We want you to send us a trial order at once, hence this remarkable tire offer.

If YOU NEED TIRES don't buy any kind at any price until you send for a pair of Hedgethorn Puncture-Proof tires on approval and trial at the special introductory price quoted above; or write for our hig Tiro and Sundry Catalogue which describes and quotes all makes and kinds of tires at ahout half the usual prices.

DO NOT WAIT but write us a postal today. Do NOT THINK OF BUYING a bicycle or a pair of

DO NOT WAIT but write us a postal today. Do NOT THINK OF BUYING a bicycle or a pair of tires from anyone until you know the new and wonderful offers we are making. It only costs a postal to learn everything. Write it NOW. J.L. MEAD CYCLE COMPANY, CHICAGO, ILL.

LATEST COURT DECISIONS IN PAT-ENT, COPYRIGHT AND TRADE-MARK CAUSES.

COLUMBIA MOTOR CAR CO. et al. v. C. A. DUERR & CO. et al.

(Circuit Court of Appeals, Second Circuit. Jan. 9, 1911. On Taxation of Costs, Feb. 8, 1911. 184 F. R. p. 893.)

1. PATENTS—CONSTRUCTION AND OPERATION -EFFECT OF DELAY IN PATENT OFFICE.

Where an applicant for a patent followed strictly the statutes and rules of procedure of the Patent Office, the courts cannot exact a greater measure of diligence from him, and the fact that he took advantage of the delays which the law permitted him, cannot affect the consideration to which his patent is entitled when granted.

2. PATENTS—VALIDITY—COMBINATION CON-TAINING UNDESCRIBED ELEMENT.

A patent is granted for solving a problem, not for stating one, and a claim for a com-bination which embraces an element only in case it is made capable of being employed in the combination and without disclosing means of adapting it, is invalid as disclosing nothing definite.

3. PATENTS—INFRINGEMENT-EQUIVALENTS.

A constant volume gas engine is not the equivalent of a constant pressure engine under a patent entitled to a fair and reasonable, but not a broad, range of equivalents. 4. PATENTS—VALIDITY AND INFRINGEMENT

GASOLINE AUTOMOBILE.

The Selden patent, No. 549,160, for an improved road engine, granted in 1895 on an application filed in 1879, claim 11, covers, broadly speaking, a combination of three elements—the carriage, the drive mechanism, and the engine. The first two elements were concededly old, and no novelty is disclosed in them. The engine, described as a "liquid hydrocarbon gas engine of the compression type," was also old; there being at the time of the application two forms of such engine in extensive use-the Brayton, or constant pressure, engine with slow com-bustion and constant flame ignition, operating without explosion, and the Otto, or constant volume, explosion engine. The combination itself was not new in an inventive sense, as the Brayton engine had been applied to motor boats and to some extent to vehicles. As thus broadly stated in the language of the claim, it is void for lack of invention in view of the prior art, but as limited by the spenification and drawings, which show an engine of the Brayton type, with certain improvements and adaptations resulting in a decrease in weight and bulk in proportion to the power produced and in increase in speed, the claim discloses invention and is valid as covering a combination embracing as a novel element an improved liquid hydrocarbon engine of the Brayton type. As so limited, the claim is not infringed by the modern gasoline automobile in which the engine is of the Otto constant volume or explosion type with electric ignition.

5. Words and Phrases - "Constant PRESSURE ENGINE" - "SLOW COMBUS-TION"--"NONEXPLOSION."

A "constant pressure engine" is one in which the cylinder pressure remains the same during the outward travel of the piston while the volume of flame increases. The pressure is applied continuously. This mode of operation is also called "slow combustion" and "nonexplosion."

6. Words and Phrases - "Constant VOLUME ENGINE."

A "constant volume engine" operates in a different manner from a constant pressure engine. The volume during ignition theoretically remains constant: the pressure increases. The action is spasmodic and is kept in motion by a series of explosions.

SIEBER & TRUSSELL MFG. CO. v. CHICAGO BINDER & FILE CO.

(Circuit Court of Appeals, Seventh Circuit. Jan. 10, 1911. 184 F. R. p. 930.)

PATENTS-INVENTION-LOOSE-LEAF BINDERS.

The Nelson, Dawson & Trussell patent, No. 806,702, for a loose-leaf binder, discloses nothing new, except the substitution, for the lock previously in use in such binders, of a locking device adopted from the related art of automatically locking boxes, and is void for lack of patentable invention.

COTTO-WAYO CHEMICAL CO. v. PEROLIN CO. OF AMERICA.

(Circuit Court of Appeals, Eighth Circuit. Feb. 15, 1911. 185 F. R. p. 267.

1. PATENTS-CONSTRUCTION OF CLAIMS -PROCEEDINGS IN PATENT OFFICE.

A claim in a patent as allowed must be read and interpreted with reference o claims that have been rejected and to the prior state of the art, and cannot be so construed as to cover either what was rejected by the Patent Office or disclosed by prior devices.

2. Patents—Construction—Proceedings IN PATENT OFFICE.

The liberal construction allowed to pioneer inventions cannot be invoked in favor of a patentee whose claim was limited to save it from anticipation by previous patents, so as to broaden the claim and practically make it cover what was rejected by the Patent Office.

3. Patents—Construction—Proceedings IN PATENT OFFICE.

Where a patentee on the rejection of his application inserts limitations and restrictions for the purpose of obtaining his patent, he cannot, after he has obtained it, claim that it shall be construed as it would have been construed if such limitations and restrictions were not contained in it, nor insist ou a construction which will include what he was expressly required to abandon and disavow as a condition of the grant.

4. Patents—Invention—Dust-Collecting SUBSTANCE.

The Singer patent, No. 833,423, for processes for making dust collecting or absorbing substances and the products of such processes, which processes consist essentially in drying an absorbent material, as saw dust, and adding thereto a relatively non-volatile oily substance, is void for lack of novelty and patentable invention in view of the prior art.

ACME-KEYSTONE MFG. CO. v. DEAR-BORN et al.

(Circuit Court of Appeal, Second Circuit. Feb. 14, 1911. 185 F. R. p. 503.)

PATENTS-INFRINGEMENT -- BLIND STITCH SEWING MACHINES.

The Dearborn patents No. 639,669 and No. 705,326, for improvements in sewing machines of the kind known as "blind stitchers," construed, and held infringed by the machine of the Dearborn patent No. 814,642.

WARNER INSTRUMENT CO. v. STEWART & CLARK MFG. CO.

Jan 3, 1911 185 F. R. p. 507.)

1. Patents—Invention — Combination of OLD ELEMENTS.

The mere bringing together of old parts and allowing each to work out its own effect, without producing some new machine or product, is not invention; but, to render a combination of old elements patentable, it must produce a different force or effect or result from that given by the parts separ-

2. Patents—Invention — Drive Gearing FOR SPREDOMETER.

The Cadman patent, No. 837,188, for a drive-gearing for automobile speed indicating mechanism, the essential feature of which is the swivel-joint connection of the flexible shaft which drives the speed indicator with the drive-gearing attached to a front wheel, to prevent the bending or twisting of the shaft with the rocking and turning of the wheel, is void for lack of invention in view of the prior use of similar operating for the same purposes, iu dental machines, shearing machines, etc.

PENN ELECTRICAL & MFG. CO. v. CONROY.

(Circuit Court of Appeals, Third Circuit. Feb. 4, 1911. 185 F. R. p. 511.)

1. PATENTS-REISSUES-GROUNDS.

Where a patent for a process was adjudged invalid for lack of patentable invention, in that the process was not new, but the claim was merely for the function of a machine to do what had previously been done by hand, the case was not one of in-

sufficiency, overstating, inadvertence, accident, or mistake, which would entitle the patentee to reissue under Rev. St § 4916 (U. S. Comp. St. 1901, p. 3393).

2. Patents-Validity of Reissue-Ma-CHINE FOR CHIPPING GLASS.

The Conroy reissue patent, No. 12,789 (original No. 723,139), for a machine for chipping the edges of glass articles, is void as granted without authority of law.

ROWLAND v. BIESECKER.

(Circuit Court of Appeals, Second Circuit. Feb. 14, 1911. 185 F. R. p. 515.)

1. Patents—Licenses—Construction and

A license contract under a patent, providing that "this agreement to extend five years from date with a privilege of ten years or terminate at any time if by mutual consent of both parties," gave the licensee the privilege of continuing for ten years which he could exercise ex parte, and it was sufficient to extend the license if he continued making the patented machines or otherwise indicated his intention.

2. Courts — Witnesses — Competency in FEDERAL COURTS.

Under Rev. St. § 858, as amended by Act June 29, 1906, c. 3608, 34 Stat. 618 (U. S. Comp. St. Supp. 1909, p. 242), which provides that the competency of a witness to testify in any civil action, suit, or proceeding in the courts of the United States shall be determined by the laws of the state, and Code Civ. Proc. N. Y. \$829, the testimony of a defendant in a suit in equity for infringement of a patent, brought by an assignee, as to personal transactions between himself and complainant's assignor, since deceased is incompetent.

3. PATENTS-LICENSES-CONSTRUCTION.

Where a license under a patent required the licensee to pay a royalty on machines sold, but contained no provision as to the effect of a default, mere delay in the payment of royalties did not operate to terminate the license.

CONTINENTAL AUTOMOBILE CO. v. A. G. SPALDING & BROS.

(Circuit Court of Appeals, Second Circuit. Feb. 14, 1911. 185 F. R. p. 518.)

PATENTS—INFRINGEMENT— CLUTCH MECH- 4. COURTS — FEDERAL COURTS — JURISDIC-

The Mabley and Franquist patent, No. 883,552, for a clutch mechanism for automobiles of the reversible cone clutch type, held not infringed by a clutch of the multiple disk type.

KENNICOTT WATER SOFTENER CO. v.

(Circuit Court of Appeals, Seventh Circuit. (Circuit Court of Appeals, Seventh Circuit. Jan 10, 1911. 185 F. R. p. 520.)

PATENTS -- SUIT FOR INFRINGEMENT --JURISDICTION OF EQUITY.

Injunction is not the appropriate remedy for past infringements of a patent, and should be used only in the prevention of further injury, when further injury is act-ually threatened; and if a defendant has in good faith ceased infringement before suit brought, which fact the complainant had full opportunity to learn, and the court is satisfied that no further infringement is intended, or reasonably to be apprehended, it may properly refuse an injunction and dismiss the bill.

PARSON MFG. CO. v. COE. (Circuit Court of Appeals, Third Circuit.

Feb. 10, 1911, 185 F. R. p. 522.) 1. Patents—Infringement—Steam Blower.

The Parson patent, No. 573,480, for a steam blower, as limited by its terms and the prior art, held not infringed.

2. Patents — Infringement--Smoke Con-SUMING FURNACE.

The Parson reissue patent No. 12,072 (original No. 681, 457), for a smoke-consuming furnace, held not infringed.

3. PATENTS-INVENTION-GRATE BAR.

The Parson patent, No. 702,585 for a grate bar, held void for lack of invention.

BOUTELL MFG. CO. v. HUNT MFG. CO. (Circuit Court, W. D. New York. Oct. 14,

1911. 185 F. R. p. 525.) 1. PATENTS-VALIDITY AND INFRINGEMENT-PAR-ING MACHINE.

The Tripp patent, No. 572,689, for improvements in apple paring and coring machines, while of narrow scope, was not an-

ticipated and discloses invention; also held infringed.

2. Patents Validity and Infringement-PARING MACHINE.

The Boutell patent, No. 693,778, for an improvement in apple paring machines, the purpose of which is to give to the cutting knife a variable rotary movement and a more rapid movement at the ends of the fruit, was not anticipated, is novel and useful, and discloses invention; also held infringed.

3. Patents - Validity and Infringement-PARING MACHINE.

The Boutell patent, No. 892,394, for improvements in paring and coring machines, covers a combination of old elements with the addition of a pusher device, the operation of which is novel and useful, and which renders the combination patentable as involving invention; also held infringed.

NATIONAL CASKET CO. v. NEW YORK & BROOKLYN CASKET CO.

(Circuit Court, S. D. New York. Feb. 23, 1911. 185 F. R. p. 533.)

1. Courts — Federal Courts — Jurisdic-TION—PATENT INFRINGEMENT.

A federal Circuit Court has jurisdiction of a suit for infringing a design patent.

2. Courts—Federal Courts—Jurisdic-TION-TRADE-MARKS.

A federal Circuit Court has no jurisdiction of a suit for infringing a common-law trade-mark or for unfair competition, in the absence of diverse citizenship.

3. COURTS-FEDERAL COURTS- NATURE OF CAUSE PLEADED.

A bill of complaint setting forth a cause of action for patent infringement, "further" showing adoption by defendant of a tradename deceptively similar to complainant's, "further" showing unfair competition in trade, resulting, among other things, from the location of defendant in complainant's former place of business, and praying injunction against imitating complainant's invention, from employing such name, and from unfairly competing, states distinct causes of action, as affecting the court's jurisdiction; the allegations respecting unfair competition and use of complainant's trade-name not being mere incidents to the suit for infringement.

TION-PLEADING.

The federal courts jurisdiction cannot be extended by uniting in the same complaint a cause of action of which it has no jurisdiction with one of which it has.

5 PATENTS—INFRINGEMENT—PLEADING.

A bill for infringement of a design patent is not insufficient because the patent contains no written description of the

WESTERN GLASS CO. v. SCHMERTZ WIRE-GLASS CO. et al

(Circuit Court of Appeals, Seventh Circuit. Jan. 3, 1911. 185 F. R. p. 788.)

1. Patents—Suit for Infringement—De-

A patent procured by fraud and collusion, or by illegal procedure, either in the Patent Office or in a suit to procure its issuance under Rev. St. § 4915 (U. S. Comp. St. 1901, p. 3392), can be attacked only by the government, and such matters cannot be set up as defense in a suit for infringement.

2. Patents—Priority of Invention-Pro-CESS AND APPARATUS FOR MAKING WIRE-GLASS.

The Schmertz patents, reissue No. 12,443 (original No. 791,216) and 791,217. each for a process and apparatus for making wireglass, are not invalid for priority of invention by Appert, to whom a French patent was issued January 12, 1894.

3. Patents — Validity and Infringement — PROCESS AND APPARATUS FOR MAKING WIRE-GLASS.

The Schmertz patents, reissue No. 12,443 (original No. 791,216) and No. 791,217, each for a process and apparatus for making wire-glass, were not anticipated, and, while not of a pioneer character, disclose invention of a high order. Claims 1, 2, 6, and 7 of the reissue patent, which are broad claims, are infringed by the process and apparatus of the Jungers patent No. 867,510, in which the wire is fed positively and under both longitudinal and lateral tension between the two successively rolled layers of tween the two successively rolled layers of glass; but patent No. 791,217 is not so infringed, each of its claims being limited to a "by-gravity" feed.

MECHANICAL INVENTIONS AND DESIGNS

Patients for which have been procured through the Patent Soliciting Office of E. G. Siggers, Patent Lawyer, Washington, D. C.

Henry Sunderman, Madison, Nebr. Road Grader.—This invention has for its object to provide a road grader equipped with means for scraping the surface of the road, and then packing the dirt after the surface has been leveled and graded, the parts being so disposed as to eliminate side draft. The device is preferably mounted on a wheeled frame, and comprises a front transversely disposed scraper blade arranged in a substantially vertical plane, a rear transverse blade set at an inclination and extending downwardly and rearwardly and arranged to pack the dirt after the surface has been scraped by the front blade, and a draft device connected with the front scraper blade intermediate the ends thereof.

George W. Fish, Central City, Iowa. Collapsible Mold for Culverts.—This invention has for its object to provide a simple and efficient cement mold, capable of adjustment to construct culverts of different diameters, and adapted to be collapsed to enable it to be conveniently and quickly removed after a culvert has been molded. The mold consists of a sheet metal shell having overlapped longitudinal edges, one of the edges being provided with sets of longitudinal slots, a longitudinal bar secured to the inner face of the other overlapped edge and provided with loops arranged to project through the said slots, and a movable interiorly arranged key passed through the loops and detachably securing the overlapped edges together.

Charles A. Japhet, Cordell, Okla. Crude Oil Burner.—This invention has for its object to provide a crude oil burner, adapted for use in cooking stoves and furnaces, to insure a hot steady fire, the oil burner being constructed in such a manner that if it becomes clogged, steam may be admitted and the accumulation readily blown out. The invention comprises a pan having a wall or flange provided with a discharge aperture, a mixer extending outwardly from the wall or flange, a steam generator extending inwardly from the wall or flange and located above the pan and connected at its discharge end with the mixer, a valve for said discharge aperture, a water supply connected with the inlet end of the steam generator, and a fuel supply pipe connected with the mixer in advance of the point where the steamenters

John M. Jordan, Summit, Georgia. Weather and Cinder Strip for Car Doors.—The invention of this patent has for its object to provide an adjustable cinder strip, adapted for use on the doors of freight or box cars, and equipped with means whereby the strip may be forced into engagement with the side of the car. practically locking the door in place, effectually sealing and closing the opening between the inside face of the door and the siding, and affording a means whereby the door may be sealed when in a closed position. The invention consists in a laterally shiftable cinder strip mounted in guides upon the door edge, and having screw threaded engagement with one or more adjusting bolts, which when rotated in one direction force the cinder strip inward, said bolts being attached to arms or levers, whereby they may be rotated.

Christman D. Jauer, Karnes City, Texas. Two patents.—The invention of the first patent relates to a grubbing plow designed for preparing land for cultivation, after the land has been cleared of timber, to clear the land of the remaining underbrush, and capable of splitting and tearing the stumps to pieces and of severing the underbrush at the throat of the plow to prevent the latter from becoming clogged. The plow is adapted to be operated in a gang in connection with a traction engine. The plow comprises a vertically disposed forwardly inclined blade tapered to a point arranged to pierce a stump, a horizontally disposed tapering plowshare along the bottom of the blade provided with teeth arranged to cut and tear up the wood of the stump, and a movable blade arranged at the throat of the plow to prevent choking.

The second patent is an improvement on the first, the improvement residing in the horizonally disposed tapering plowshare, which in this instance comprises a horizontal plate having an angularly disposed edge and provided at intervals with approximately horizontal cutting teeth having transversely disposed cutting edges, said plowshare being also provided with upwardly extending cutting blades, located in rear of the cutting edges of the teeth, and having oppositely inclined side faces forming a top cutting edge, the latter being inclined towards the cutting edge of the adjacent tooth.

Charley Bjorklund, Bowesmont, N. D. Two patents. Assignor of onethird to John V. Anderson, Drayton, N. D., and one-third to H. M. Waldren, Drayton, N. D.—The invention of the first patent has for its object to provide an efficient basket attachment, adapted to be readily applied to and removed from a hand barrel truck, enabling the latter to be advantageously employed in carrying parcels. The attachment comprises a truck having a foot piece provided with openings, and also having openings at the rear portion of the frame of the truck, and a receptacle provided at the front with arms arranged to engage the openings of the foot piece so as to support the front of the basket at an elevation, said receptacle being provided at the back with terminal portions adapted to engage the rear openings of the

The object of the invention of the second patent is to provide a barrel truck, equipped with high wheels which will cause the truck to run more easily, enabling a heavy load to be more conveniently handled. The truck is so constructed as to enable a load to be readily balanced over the axle, thereby preventing the center of gravity of the load from being thrown too far rearward when the handle of the truck is let down upon the floor, so that the truck may be readily lifted therefrom, when it is desired to lift the load. The truck is equipped with a chain attachment adapted to be passed around a barrel and connected with the side bars of the frame of the truck, to enable the frame of the truck to be utilized as a lever for tilting a heavy barrel onto the truck.

Windfrey S. Morgan, Lewisville, Ark. Adjustable Cultivating Harrow. -One of the objects of the invention of this patent is to provide a cultivating harrow adapted to be adjusted laterally to suit rows of different widths, so as to admit of the teeth being adjusted vertically to arrange them in proper position with relation to the soil. The harrow is equipped with reversible teeth, adapted either to cultivate the soil or merely scratch the surface of the ground. The invention comprises among other things, upper and lower plates or members having notches, a reversible and adjustable harrow tooth fitted in said notches and having one end sharp pointed and the other diamond pointed, an eye bolt receiving the harrow tooth, and means connected with the plates or members for adjustably engaging the bolt.

Thomas E. Ewer, Des Moines, Iowa. Four patents.—The invention of the first patent has for one of its objects to provide a mowing machine provided with a cutting mechanism, adapted to cut close to trees and stumps, and capable of cutting grain smoothly at each side of a knoll. A further object is to provide a means for raising and lowering the cutting mechanism to enable the machine to pass over high stumps, and for pivotally adjusting the cutting mechanism to arrange the same in proper position with the ground, and also to throw the cutting mechanism out of the way when desired. Means are provided for adjustably connecting the draft animals with the tongue and supporting frame, at the inner end of the cutting mechanism, thereby relieving the frame of the end thrust, present in draft devices which are mounted solely on the tongue.

The object of the invention of the second patent is to provide a whiffletree hook, adapted to be applied to a singletree, or other whiffletree without the aid of a blacksmith, or other skilled workman, and capable of being readily tightened when it be-The invention comcomes loose. prises a whiffletree hook including a cuff composed of sections detachably interlocked at one end, a fastening device for connecting the other ends of the sections to clamp a whiffletree, and a split ring having laterally separable members, one of the members being integral with one of the sections of the cuff and the other member being connected to the cuff by

the said fastening device. The invention of the third patent is a snap hook designed particularly for use in connection with neck yokes, and capable of being maintained in a closed position by the tension or strain to which it is subjected, and of effectually preventing the link, ring, or other part engaged by it from accidentally opening the tongue of the hook and becoming disengaged from the latter. The invention comprises a hook provided at its bill with spaced inner and outer inwardly extending lugs, a tongue pivoted at an intermediate point to the end of the shank and having an inner arm extending across and closing the mouth of the hook, the inner arm provided with an outwardly projecting lug fitting between the lugs of the bill and

engaging the outer lug. The invention of the fourth patent provides an efficient trace fastener of that type that is detachably secured over the end of the singletree, and capable of being readily removed therefrom when desired. The fastener is constructed of separable cuff sections provided with spaced lugs, one of the lugs having a pivot piercing the other lug, a trace engaging device mounted between the lugs and connected with the same by the said pivot, and afastening device piercing the sections and arranged to pass through the whiffletree and secure the lugs and the pivot in engagement with the trace engaging device.

James M. Leaver, Jr., El Paso, Texas. Saw Gage. Four patents.—The principal object of this invention is to provide a gage for gaging the sizes of lumber to be sawed or cut, in which the stops can be readily moved from one place to another to provide for changes in the cutting sizes, and also to permit the ready interchange of different stops for unusual lengths without the necessity of removing or adjusting all of the gage stops, and to provide mechanism which will permit the ready removal and replacement

of any stop independent of the others, and will effectually hold the stops against accidental adjustment. The gage comprises broadly a support, and a plurality of gage stops movably mounted on the support, each stop being independently detachable from the support.

The invention of the second patent is of a different construction from the first, and comprises a substantially horizontal fixed base plate having a longitudinal slot, and transverse slots communicating therewith and forming seats on opposite sides of the longitudinal slot, a plurality of gage stops slidably mounted in the seats and having their upper ends normally projected above the base plate, and yieldable means located beneath the base plate and engaging the gage stops for normally holding them in

elevated position.

The invention of the third patent is a further modification of the gage and has for its object to provide improved means for maintaining the gage stops in their operative positions, said means permitting the gage stop to be moved out of the way by the material being gaged, and also permitting the ready removal of the gage stops. In this patent the gage includes a fixed base plate provided with slots, gage stops movable through the slots, weighted arms yieldingly holding the stops in projecting relation above the base plate, the mounting of the arms being independent of each other, and each weighted arm being removable to allow the placing of the stops in any one of the slots without disturbing the others.

The invention of the fourth patent represents still another form of gage, and has the same advantages as the others, but is of a different construction. It consists in the combination with a pivot support, a gage stop having an open ended seat that pivotally receives the support, and a weighted arm that closes the open end of the seat and yieldingly maintains the stop in a predetermined position.

Emadia J. Grenier, Chicago, Ill. Two patents.—The invention of the first patent relates to combined jacks and restoring drops for telephone switch-boards, and has for one of its principal objects to provide a mechanism, whereby the initial movement of the shutter is made positive, thereby avoiding any danger of its not operating when a call is sent in and when it drops off automatically, restoring it when the plug is inserted to make connection. The structure comprises a supporting block, a shutter pivotally mounted thereon and having an inwardly extending lug, said block having an opening disposed in rear of the lug, a plug receiving thimble extending through the block, and comprising clamping sleeve sections threaded together and embracing said block, a restoring trip comprising a lever fulcrumed on the inner section, the outer arm of the lever operating in the opening of the block and bearing against the lug of the shutter, the inner arm being movable into the path of movement of a plug inserted into the thimble.

The invention of the second patent is an improvement on the first in that it is constructed so that the electromagnet controlling the operation of the shutter or indicator is readily removable and replacable without the necessity of dismembering the device. It comprises a support, an electromagnet mounted on the support, another support movably mounted on the first support, an armature movably mounted on the second support and co-operating with the magnet, said second support when moved carrying the armature out of co-operation with the magnet to permit the removal of said magnet from its sup-



Advertisements inserted in this column for 10 cents a line (about 7 words) each insertion. Every new subscriber sending \$1.00 to The Inventive Age will be entitled to the Age one year and to five lines three times free. Additional lines or insertions at regular rates.

FOR SALE—Patent No. 978,844. Automatic Car Dumper. Just the trick to be used around mines for dumping coal. For further information, write Van C. Calhoun, Dublin, Ark.

FOR SALE-Patent No. 977,428. Movably supported lantern carrier by which a lantern may safely and easily be suspended in a barn. Address, Andrew J. Aune. Milton, N. Dak. jan

Por Sale—Patent No. 992,719, dated May 16, 1911. Spring Wheel for Automobiles. No danger of puncture: is very practical and cheap to make. Will sell for moderate price. Address, Grant Leeper, 514 South Church St., Visalia, California.

FOR SALE—Patent No. 1,003.831, serial No. 583,231. Holder for Drinking Cups. Individual, sanitary, ornamental, Principally for public schools and offices in states and cities where sanitary laws have been passed. Enquire of J. B. Walker, P. O. Box 145, Rush Springs, Oklahoma.

FOR SALE—Patent No. 1,001.337. Mine Cage Signal. A cheap and reliable signal system, for all kinds of deep mines. I will sell, lease, or form company to manufacture. It is fireproof and rust-proof. The cost of maintenance should not exceed \$1,00 per year for 39. Address, Lee Bayer, Willisville, Ill. jan

FOR SALE outright—U. S. Patent No. 991,496. dated May 9. 1911. Sewing Machine Guard. Surrounds the bobbin winder and driving wheel. Protects cloth from grease and dirt. In no way conflicts with the operator. Will fit any machine. Address, Mrs. Gertrude Frye, Eureka, Kan. jan

FOR SALE—Patent No. 1,000,503, dated August 15, 1911. Expansion Reamer. Very simple and profitable. Can be extended to various degrees. The blades can be readily exchanged. Address. E. Ferencik, 366 66th Ave.. West Allis, Wisconsin.

FOR SALE — Patent No. 995,819. Aeroplane Automatic Control. Does not interfere with manual control. May be locked leaving full manual control or used in unison. Extra weight about twenty pounds, Address, James L. Walker, Kamela, Oregon, dec

FOR SALE-Patent No. 996,045, dated June 27, 1911. Engine. Will sell outright or on royalty. Guaranteed to save one-third fuel with twenty per cent added power and speed. Address, G. W. Baker, Box 83, Brown Station, New York.

For Sale—Patent No. 950,459, dated Feb. 22, 1910. This device can be used for coal shafts and also for elevators. No matter how many times the rope breaks it never fails. No time wasted. As soon as the rope is fixed you can start and hoist again. Address, John Skaba, Box 89, Braidwood, III.

FOR SALE—Patent No. 996,312, dated June 27, 1911. Insulator. Is particularly adapted to withstand sleet and storm. Does not need any short wire to tie same, and because of lying close to timber cannot easily be broken by stones thrown by boys. Will hold two wires as well as one and with the same ease in handling. Because of its safe construction is specially adapted for use in cities. For full particulars address, T. D. Childress. Ansted, W. Va.

For Sale-Patent No. 997,932, dated July 11, 1911. Rail Joint. Will mean the saving of thousands of dollars daily. Will insure smooth riding and prevent the pounding of wheels over joints. Eliminates all bolts and fish plates. Address, Arthur Munchausen, Box 103, Independence, La.

For Sale-Two Patents No. 995,563, dated June 20, 1911, and No. 976,289, dated Sep. 22, 1910. Address, A. M. Porter, R. No. 3, Box 36, Amsterdam, Mo. nov

For Sale-U. S. Patent No. 995.633, dated June 20, 1911. Logging Bunk. Will sell outright or shop rights. For particulars write, Joseph N. Peterson, Ellison Bay. Wisc. nov

FOR SALE-U. S. Patent No. 995,974, dated June 20, 1911. Improved vacuum dust tank; cash sale. Interested parties, address, J. C. Lewis, Hotel De Soto, Mansfield, Ohio.

For Sale-Patent No. 998,233, dated July 18, 1911. A new game board. Very interesting. Will sell outright or on a royalty. Address, Ray S. Crocker, Wellington, Ohio.

FOR SALE — U. S. Patent No. 995.536, dated June 20, 1911. Automatic Syrup Skimmer, Cash sale. Interested parties address, Andrew J. Hardin, Quincy, Fla.

Case. Splendid practical device for physicians and nurses. Address, Joseph C. Jenkins, Lititz, Pa.

FOR SALE—Patent No. 885,557. An improved bolt-holder for preventing the rotation of bolts while the nuts are being removed or tightened up. An indispensable tool for the blacksmith and farmer. Address, C. T. Tarver, Hollywood, Ark.

FOR SALE — Patent No. 992,862. Onion Harvester. Machine is propelled by a gasoline engine. Cost of building is small. Easy to operate. The cleaned onions are delivered in the crates. Address. T. De Young, Jr. South Holland, Illinois.

FOR SALE-Patent No. 998,471, dated July 18, 1911. Shoe Fastener. For further information address, John M. Dahlgren, Bethune, S. C.

POR SALE—Patent No. 993,879, dated May 30, 1911. Shop rights for sale. This economy hay rack can be mounted upon the bolsters of a wagon and removed by one man. Can be put in out of the weather in a space one and one-half feet wide by sixteen feet long. For particulars address, William H. Rodebaugh, Cedarville, Illinois.

FOR SALE — Canadian Patent No. 132,646, dated April 25, 1911; U.S. Patent No. 974,571, dated Nov. 1, 1910. Attachment for wheelbarrows. All reasonable offers will have my personal attention. Address, Wm. C. Johnson, Fence, Wisc. nov

For Sale or on royalty—Reissue Patent No. 13,258. A self-rotating projectile for smooth bore and rifle guns. The most complete invention of the age for sports men or heavy guns. Will be demonstrated to interested parties at Appalachian Exposition. Knoxville, Tenn. Sep. 2, to Oct. 1, 1911. Address, H. H. Hendrix, R. D. No. 2, Powell Station, Tenn.

FOR SALE—Patent No. 958,461, dated May 17, 1910. Detachable Wagon Skate. Can change carriage or wagon into sleigh in a few minutes. Further particulars address, Max Aubertel, R. F. D. No. 1, Box 364 A, Edgewater, Colo.

WANTED.

W ANTED—A company or firm to manufacture rotary engine, patent No. 995,076, U. S. A. on shares or royalty. Address, T. G. McGonigle, Lambton Mills, Ont. Canada. dec

WANTED—To exchange information with persons having patents on railroad appliances. I have sleeping cars, ventilating appliances, anti-rail spreads, loose rail indicators, iceless refrigerators, and oval window. Give detailed information in these lines only. Address, Joseph A. Shires, 1921 Sherman Street, Denver, Colo. oct

W ANTED—To correspond with manufacturers regarding the manufacture and placing on the market of two good patents having practically an unlimited field for their operation. Address, P. O. Box 30, Falling Spring, W. Va.

W ANTED a Company in the U. S. to manufacture my saw-fitting device, patent No. 972,789, dated Oct, 10, 1910. Also a company in Canada to manufacture same device, Canadian Patent No. 124,345, dated March 8, 1910. I will sell either or both of said patents. Address, C. R. Pierce, Rainier, Washington.

WANTED—Two or three persons with some capital to correspond with a patent owner of a new meritorious article. Practice on model very satisfactory. Will not sell patent but will join in company. Address, F. D. F. Box 28, Waterbury, Conn.

WANTED—Not for sale but want a company to manufacture my manure loader on royalty, Patent No. 918,695. Address, Lars C. Peterson, Osage City, Kansas.

CHAS. F. LAGANKE

MANUFACTURER OF

HIGH GRADE SPECIALTIES

MODELS AND EXPERIMENTAL WORK,

SPECIAL TOOLS, CARD BUILDING.

II8 St. Clair Ave. N. E., Cleveland, Ohio. "Correspondence Solicited."

Electrical Review and Western Electrician

Published weekly from the center of the industry, this publication is in the best possible geographical position to gather and present the most important and interesting news of the entire electrical industry.

SUBSCRIPTION PRICE

U.S. \$3.00 per year, Canada \$4,00 per year, Foreign Countries \$6.00 per year. Sample Copy Free

It is seen and read by practically every buyer of electrical material in this country and abroad. Advertising rates on application.

ELECTRICAL REVIEW PUBLISHING CO., 507 Marquette Bldg., CHICAGO.

A NEW BOOK FOR INVENTORS Patents and How to Make Money out of Them,

By W. B. Hurchinson.

This is the only book published, giving a detailed and full account, from the author's actual experience, of just what steps are necessary from the time the invention is conceived, to the time it is sold, with a clear and concise resume of the law and practice, legally and commercially, of trade-marks and copyrights. It also tells accurately How and What to invent. How to sell Inventions, Place them on the Market, Interest Capital in them, and to successfully Promote a Stock Company. It also contains an index of forms worth double the price of the book to any one interested.

ELEGANTLY CLOTH BOUND.

GOLD STAMPED. \$1.00 Postpaid.

Sent with one subscription to AGE for \$1.50.

Or will sell separately.

Address- The Inventive Age Pub. Co.,

918 F St., N. W. WASHINGTON, D. C.

HALF-TONES ZINC ETCHINGS ...DESIGNS...

LANMAN

ENGRAVING

COMPANY

PROCESS ENGRAVERS, ILLUS-TRATORS, DESIGNERS. TRADE-MARK DRAWINGS EXECUTED.

"Quality and Speed"

POST BUILDING

Fourteenth St., and Pennsylvania Ave. N. W.

Phone, Main 673

A VALUABLE OFFER TO INVENTORS.

A Complete Outfit of Printed Matter for \$20.

- 1. A zinc etching of your invention for use in printing letterheads, envelopes, circulars, etc.
 - 2. One thousand printed circulars.
- 3. Five hundred envelopes with your name and address printed in the corner.
- 4. Five hundred letterheads with a cut of your invention, and your name and address neatly printed thereon.
- 5. A list of manufacturers in the special line of your invention.
- 6. A form letter to be followed in conducting your correspondence with manufacturers and others.
- 7. Four dozen deeds useful in selling state, county, town or shoprights.

 Address:—

INVENTIVE AGE PUBLISHING CO. Dept. O. WASHINGTON, D. C.

ATTENTION INVENTORS!

LISTS OF MANUFACTURERS FURNISHED.

We have increased our facilities for furnishing lists of manufacturers, and now cover every line of industry. The names are obtained from well known directories.

Our charge for each list is one dollar.

In ordering, please state specifically the class of manufacturers desired. Address: Inventive Age Pub. Co., Dept. M. 918 F. St., Washington, D. C.

Every subscriber when sending \$1.00 is entitled to a free advertisement, not exceeding five lines, of any patent in which he may be interested. The ad, will be inserted three times.

THE INVENTIVE AGE PUBLISHING CO., Washington, D. C.
I herewith enclose \$1.00 for one year's subscription to
"THE INVENTIVE AGE."
I also enclose ad. for insertion in the (Patents for Sale*) (Want*) column of your paper.
NAME
P. O
State

*Please indicate in which column you want the ad, inserted,

N. B.—Remit in the way most convenient.

579 moentive age

Established 1889.

Published monthly by

THE INVENTIVE AGE PUBLISHING CO.,

National Union Building, 918 F Street, N. W., Washington, D. C.

THE INVENTIVE AGE is sent, postage prepaid, to any address in the United States, Canada, Mexico, Hawaii, and Porto Rico, for ONE DOLLAR a year; to any other country, postage prepaid, ONE DOLLAR AND TWENTY-FIVE CENTS.

Correspondence with inventors, mechanics, patentees, and manufacturers, is invited. The columns of this journal are open for the discussion of such subjects as are of general interest to its readers.

Technical matter is particularly desired. We want practical information from practical men.
THE INVENTIVE AGE is independent.

Special facilities for furnishing cuts of any patented device together with descriptive article. Business specials 10 cents a line each insertion: 7 words to the line. No advertisement less than 25

Address all communications to

THE INVENTIVE AGE PUBLISHING COMPANY,
WASHINGTON, D. C.

Entered at the Post-office as 2nd class matter.

WASHINGTON, D. C., NOVEMBER 1, 1911.

DEFECTIVE CLASSIFICATION OF PATENTS IN THE PATENT OFFICE AND ITS EFFECT ON EXAMINATIONS.

The millionth patent having issued and the Patent Office having started on the second million, it seems an opportune time to discuss a perplexing condition which has existed for many years and promises to continue for many more. We refer to the improper or defective classification of patents in the United States Patent Office. We do not know that the classification division is at fault. Probably no one is to blame. The fault may lie in the herculean task before the Patent Office, in classifying over a million patents. We do know that the head of the classification division is an able, conscientious and painstaking official. He is doing all that he can do with the force at his command to bring order out of chaos.

There are now forty-three different divisions in the United States Patent Office, each presided over by an Examiner who has from five to nine assistants, the assistants ranging from a First Assistant to a Fourth Assistant. There are 241 general classes of inventions, each class divided into a large number of subclasses. For instance class 153, wood sawing, has 176 sub-classes. Under class 104, railways, there are 208 subclasses. In class 24, buckles, buttons and clasps, there are 265 sub-classes. In class 144, woodworking, there are 308 sub-classes.

A few illustrations will suffice to show how the patents are classified in woodworking. A bench dog is a well known device used by carpenters. One would suppose that there were not so many patents on bench dogs that it was necessary to classify minutely, yet we find under class 144, woodworking, the following subclasses: 306, bench dogs proper; 307, clamping bench dogs; 308, removable bench dogs.

are five separate sub-classes of car replacers, entitled as follows: subclass 160, car replacers; sub-class 161, cars attached; sub-class 162, hinged blocks; sub-class 163, rigid blocks; sub-class 164, shifting jacks. Under each one of these sub-classes there may be any where from ten to sixty patents classified. In making a preliminary examination, one has to know what these titles mean in order to determine in which sub-class to make the search. If he does not know, then he has to go through all the sub-classes, if he wishes to be certain that he has examined all the patents on car replacers. If one could be sure, even then, after searching all the sub-classes under car replacers, that the United States patents were all in place, he could feel reasonably confident that his search was complete. But there are so many instances in which patents have been misplaced or improperly classified, that no attorney can feel certain, after he has made a search in the specific classes, that he has examined all of the United States patents pertaining to the invention in question.

We recall an instance some years ago where a patent was found in reciprocatory meters, under measuring instruments, which anticipated a patent on a reciprocatory motor. The patent was found almost by accident by an attorney. Considerable litigation had occurred before the patent on the reciprocatory meter was brought to light. If that patent had not been found, in all probability the patentee would have been successful in his litigation. No one had ever thought it necessary to look into meters to find an anticipation of a patent on motors. The Examiner who considers water motors is careful and painstaking. Though he had been searching the Patent Office for many years and was considered an expert in hydraulics, it had never occured to him that he would find under meters a patent that would be pertinent to cite against an application for a motor. We venture to presume that there are scattered around the Patent Office, in improper classes, patents which, if discovered, would anticipate many others issued by the Office. This is no idle surmise. We have had occasion recently to examine certain classes of patents at the Patent Office and have found such conditions as warrant making more specific statements.

The purpose of a culvert is well known to every one, and it might be supposed that culverts would all be examination shows, however, that under Class 137, water distribution, sub-class mains and pipes, there are five patents on various constructions of metal culverts, some corrugated and some plain; while in Class 61, hydraulic engineering, sub-class of drains, there are over two hundred patents for various constructions of culverts. To make the classification perfect as to culverts, the five patents should be taken out of the sub class of mains and pipes, and put in the sub-

Under class 104, railways, there re five separate sub-classes of car replacers, entitled as follows: sub-class 160, car replacers; sub-class 162, anged blocks; sub-class 163, rigid cocks; sub-class 164, shifting jacks. Inder each one of these sub-classes are may be any where from ten east to know what these titles mean in created the search. If he does not now, then he has to go through all the granted class of drains under hydraulic engineering. An unskilled attorney who is not familiar with this subject might examine mains and pipes and find the five patents on culverts and think that they were all that were granted, and report to his client that his invention was patentable; or he might strike the sub-class of drains under hydraulic engineering. An unskilled attorney who is not familiar with this subject might examine mains and pipes and find the five patents or class of drains under hydraulic engineering. An unskilled attorney who is not familiar with this subject might examine mains and pipes and think that they were all that were granted, and report to his client that his invention was patentable; or he might strike the sub-class of drains under hydraulic engineering.

Another instance of improper classification relates to inventions in greenhouse structures. There are three sub-classes where an attorney has to look in order to make a complete search. In Class 108, sub-class 16 skylights, there are found three patents on greenhouse construction. In Class 37, trees, plants and flowers, under sub-class, plants, frames and houses, there are four patents on greenhouse construction, while in Class 189, metallic building structures, sub-class, greenhouse buildings-there are three patents on greenhouse construction. The attorney examining for an improvement in greenhouses would look under trees, plants and flowers and obtain the sub-class of plants, frames and houses. He would find a few patents on greenhouses in this class and conclude that he had made a complete search. He would never think of looking in the sub-class of skylights, under roofs, and still less would he imagine that in the class of metallic building structures there would be a sub-class of greenhouses.

If one were examining for a chute or flume, such as is employed for irrigating purposes, he would find it advisable to examine in two distinct classes, Class 61, hydraulic engineering—chutes, and Class 137, water distribution, irrigation and sprinkling.

The purpose of fish guards or fish screens is well known. To find all the patents relating to fish guards or fish screens, one must look in Class 61, hydraulic engineering—chutes, as well as Class 110, water purification—filters—strainers. Just why there are any patents on fish guards classified under water purification is a mystery. The proper place for them is under hydraulic engineering.

others issued by the Office. This is no idle surmise. We have had occasion recently to examine certain classes of patents at the Patent Office and have found such conditions as warrant making more specific statements.

The purpose of a culvert is well known to every one, and it might be supposed that culverts would all be classified in the same sub-class. The examination shows, however, that under Class 137, water distribution,

Vacuum cleaners are now a household necessity, and a large number of patents have been granted on them. To make a complete search for a vacuum cleaner, one must look first in Class 15, brushing and scrubbing—carpet sweepers; then in Class 230, air and gas pumps—fluid pistons—injectors and aspirators.

We might continue throughout all the classes, to show where patents

on the same subjects of invention may be found differently and separately classified, but it is thought that the instances cited will serve to make clear our point. These instances are glaring, but no doubt there are numerous cases not so apparent, where the error vet exists. When the Patent Office finds references in its search which the attorney failed to find in his examination, the applicant for the patent thinks the attorney has failed in his duty. While we are not disposed to excuse the careless attorney, who tries to make from six to ten examinations a day and does his work poorly, we know that no matter how slowly and carefully the work is done, the search is not an absolute index of what exists in the Patent Office. When Examiners who make examinations in their single class, day after day and year after year, fail to find patents and issue invalid patents on account of missing some patent that is in a different class, an attorney may well be excused if occasionally he makes an error in reporting an invention patentable.

The duty of the committee on classi fication is to go through the various classes and correct these errors. No one man can do this work by himself, and as the assistants employed in the classification division are changed from time to time, there is not that permanency of personnel in this force that is essential to accuracy. For instance, one Assistant Examiner might go through water distribution and find under the subclass of mains and pipes the various patents on culverts, and assuming that they were properly classified, let them remain there. A few months thereafter another Assistant Examiner, classifying hydraulic engineering, might find under the subclass of drains the patents on culverts, and not knowing of the work done by his predecessor in water distribution, and assuming that the patents were properly classified in the sub-class of drains under hydraulic engineering, would leave the patents in that subclass. If it were possible for one man to do all the work of classifying the patents, it would be easy to note these mistakes and correct them, but because of the changes in the personnel of the classification division, involving corresponding changes in the point of view of the Examiners, it has been found in practice that the work of one set of Examiners in classifying the patents has had to be gone over and modified by another set, making "confusion worse confounded."

Our principal purpose in calling attention to this matter is to make our readers understand that too much importance should not be attached to a report as to patentability, and that "certificates of patentability" and other guarantees, which is the custom of certain attorneys to furnish, are worth little to the inventor. If we were applying for a patent, we would accept in preference to these, an opinion from an attorney who did not profess that his opinion was equal to a guarantee that the invention was patentable, for we would know at least that he was honest.

Recovering Torpedoes by Magnets.

The recovery of a number of kegs of nails, sunk in a wreck in the Mississippi, by means of electromagnets, was described some months ago in the INVENTIVE AGE. The success in this instance has suggested the use of the same medium for recovering torpedoes fired in practice. These often sink to the bottom after their energy is expended, and this results in considerable loss, as they are practically small submarines, with self-contained power plants, steering mechanisms, etc. It is proposed to mark the points where they are lost by means of buoys, and to try to raise them by magnets.

Harvesting Sugar Cane by Machinery

The sugar-cane industry will be practically the last of the great agricultural departments of this country to have its harvesting entirely done by machinery, if the cane harvester recently exhibited at New Orleans proves effective. This machine, which is drawn by mules and is operated by a gasoline engine, cuts, tops, and gathers the cane and dumps it onto the carts. The machine has long arms which reach out and gather the stalks. The cutting and topping are done by revolving disk cutters. The leafless canes are then loaded by an elevator device into the carts which follow the machine. It is claimed that one machine will cut ten acres of cane, weighing about 200 tons, in a day, at a cost of about \$7.50. Cutting the same amount by hand costs about \$150.

Bread Making Machine.

A device used in France makes loaves of bread of any shape and size wanted. The dough passes first between cylindrical rollers and is formed into a broad ribbon, which is carried on an endless sheet to the knife. This cuts it into the desired lengths, and it passes to cylinders which roll it into a certain thickness, and then another sheet carries it to a third roller, rotating against the motion of the sheet. When the dough has undergone this final shaping, the roller rotating against the motion of the sheet stops automatically and allows the loaf to pass under it and then under a board which presses it into the desired length. When this operation is completed, the loaf falls into the pan in which it is to be baked in the oven. It is said that this machine, which runs on one-third horsepower and needs only one man for operation, can turn out 1200 loaves an hour.

Taking Moving Pictures at Night.

Moving pictures made at night mark graphic art. Flash light photographs are common enough, but in all such work the subjects must remain still, and the results have by no means been perfect. The production of artificial light strong enough to cause the exact imprint of the image on the sensitized plate is not new, but the making of a perfect moving picture which shows a number of objects in every detail, is distinctly new.

mittee in Kansas City, who wanted to advertise their metropolis, determined to overcome the obstacles in the way of perpetuating the night parade on a certain festival. A platform 20 feet high was erected on one side of a street through which the parade was to pass. On this were strung 60 arc lamps in two rows, backed by a monster sheet tin reflector, 70 feet long and 6 feet high. On the opposite side of the street was another embankment of light almost as powerful, so that for a distance of about 100 feet the street was brilliantly illuminated. The machines were started when the parade began to pass, and a film 600 feet long was made, showing every detail. Snap shots taken by private cameras were found to be as good as similar pictures made in daylight.

Wireless Cooking.

Frying eggs on ice, and other tricks of a like spectacular character were performed at a recent electrical exhibition in Chicago. It was shown that it was possible to take an ordinary frying pan, hold it over a cake of ice, break an egg into it and fry the egg without a fire, the pan being simply held in the hand. An oven of slate with an aluminum base was then placed on the marble-topped table where the ice had lain during the first experiment. It was an ordinary ovenno fire, no coils, no wires. In the oven were placed lumps of dough for making biscuits. The oven door was closed and the operator stood, watch in hand, checking off the minutes. Presently he opened the door, and there were the biscuts, well done.

A tungsten lamp screwed into a socket attached to a simple coil of wire, was placed with the coil immersed in an iron pan partly filled with water. It was set on a slate slab on the table. A skeptical spectator was invited to place his hands on the slab under the lamp. The lamp and coil were rested on his hands, and the lamp was immediately lighted.

Two plates, one a heavy disk of metal and the other a tin dinner plate, were put on the table. The table did not move a bit, but the plates sprang several feet in the air and dropped on the floor.

It was all done by wireless. Under the table was a powerful electromagnet. When the operator turned on the electric current, which was the ordinary alternating current from the city mains, a powerful alternating magnetic field permeated everything in the vicinity. It set up induced currents in any metal near by. Any electrical enthusiast can perform the same tricks.

Four Million Post Cards a Day.

Uncle Sam has a number of remarkable automatic machines in his service, and the latest is found in two monster a surprising advance in the photo- presses for printing postal cards. These have just been installed in the Government Printing Office at Washington, and are the fastest presses of the kind in the world. Each is capable of turning out 2,200,000 post cards in an eight hour working day, and under ordinary operating conditions they average 1,800,000 cards per day, or upwards of four million for the two. And even at this enormous output, they have to keep work-With true Western hustle, a com- ing six days in the week in order to

public.

Post cards were formerly printed on flatbed presses, and the sheets were afterwards cut up into individual cards on a separate machine. With the new cylinder presses, the cards are printed at the rate of 96 to each revolution of the press, and the cutting, trimming and counting of the cards is included in the work performed, thus reducing the labor cost about 50 per cent. Within a few months the government expects to have in operation a supplementary machine which will apportion the post cards in packages, a work which now requires the services of a dozen young women.

The special paper for the cards is fed to the presses in the form of rolls, each weighing 1200 pounds and containing material for 225,000 cards. Post cards turned out by the new presses are put up in packages containing 10,000 cards each. A surplus stock of 70,000,000 post cards is kept on hand at all times in a reserve

Ozone for Everyone.

The practical possibilities of ozone are described in a recent number of the Review of Reviews. In one way ozone is related to electricity, and in other directions it is a natural agent quite as powerful for good. It is an intense form of oxygen, -oxygen that has multiplied itself to acquire by that mu'tiplication strange and peculiar superiority. It is stronger in the power to burn with intense fire than any known gas or chemical. Man has never produced nor obtained a flame equal to it. It is a changing, very restless gas which frees itself from its normal form instantly when placed in the presence of any organic matter; and as soon as free it falls upon that matter and deluges it with torrents of triple-strength oxygen. The chemical expressions "cession of oxygen" and "sudden oxidation" mean, in plain words, ardent combustion. When ozone is freed from oxygen it flames so fiercely that no microbe or microbe's toxin can resist it. It destroys the poison of the residues of putrefaction as well as every impurity in the air or in the water. Yet while it does all this, it acts beneficently upon the higher organisms. By it the human blood is stimulated and regenerated. That is why the air of the mountains, like the air of the ocean (both rich in ozone) tones and strengthens the sick. But it must be remembered that ozone is a flaming fire, and that to play with fire is dangerous.

The known fact that the ozone in the air is good for men and animals and that it is a powerful annihilator of microbes, has suggested the feasibility of manufacturing it to sterilize the drinking water in general use, to purify the air of dwellings, and to use in the treatment of disease. In troubles due to poverty of the blood, in blood poisoning, and in diseases induced by microbes, ozone may be said to be a specific.

Ozone is used in various industries in the preparation of certain chemical products, in metallurgy, in manufac-

keep pace with the demand from the turing perfumes, in brewing beer, and in the making of sugar. It is used easily and simply in breweries to sterilize water, and the same method could be employed in families, which would materially shorten the list of victims of typhoid. Hitherto large and cumbersome machines have been the only ones used—machines hard to run and demanding great care and expense. But the discoveries and new methods have made it clear that the ozonator can be made so practical and at so little cost that it will be as easy to use as a water filter, or as any of the necessary instruments of hygiene.

There has been recently exhibited in Paris an ozonating apparatus for which the power is furnished either by a pair of generators or by a pilebattery with an induction bobbin. Such an apparatus sterilizes about 30 quarts per hour, at a cost of two mills per quart. The machine is arranged to do its work immediately on the turning of a faucet, which opens and closes the access to the water and to the current of ozone simultaneously. Neither current can pass without the other. Driven by the pressure of the current through a pulverizer tube, under a retort, the water pays out in a thin layer along the sides of the conduit, where it receives the full force of the ozone. Every drop, as it runs out, is forced to take in ozoned air and to be thoroughly mingled therewith. Water purposely contaminated for the test was, when ozonated, purer than spring water and more healthful than spring water, because it was more agreeable to the taste and more aerated.

Great Wireless Station.

A new wireless station which is shortly to be erected at Fort Meyer, on an elevated plateau near Washington, promises to be the most powerful in the world, even surpassing the famous Eiffel Tower. It will consist of three steel towers, arranged in an isoceles triangle, with the tallest tower as the apex. This tower will be 600 feet high, and the other two 450 feet high. The aerial wires will be stretched from outriggers on the top of the tower. Each tower will rest on a cast steel base, supported in turn by a concrete foundation, and anchored to the earth by great bolts. The anchorages will be insulated by marble slabs and sulphur fills. It is expected that 900 tons of steel will be used in the construction, which will cost about \$150,000, which will cover the cost of engine, laboratory, etc.

By this station wireless communication will be established between Washington and the Panama canal. Guantanamo, Cuba, where an important naval base is being installed, will be within constant speaking distance, and warships will be within control as far as the Azores. The towers are expected to have a working range of 2,000 miles, and under favorable conditions, greater distances will be covered. Navy officers predict that the new station will pick up San Francisco in one direction and Paris in the other.

CLASSIFIED list of Patents issued during the month appears in each issue of the INVENTIVE AGE. This keeps inventors and manufacturers posted in the art in which they are most interested. —We will send, postpaid, to any address, printed copies of any U. S. patent, with specifications and drawings, upon receipt of 10 cents per copy.--Please give correct data in ordering.---Address,

THE INVENTIVE AGE PUBLISHING CO., 918 F St., N. W., Washington, D. C.

LIST OF PATENTS

-:0:-

Issued August 22, 1911.

MECHANICAL PATENTS. (Continued from October Number.) Massage vibrator. F. H. Brautigam Matcb flare (2 pats) J. Dean Measnre attachment, Tape, T. W. Hanrath Measnring macbine, Cloth. O, Heckel et al. Metal from solutions, Extracting. O, Heckel et al. Metal from solutions, Extracting for Method or process of and apparatus for extracting.

Metals irfom the ores thereof, Method or process of and apparatus for extracting.

Metalic tie and rail fastener. P. Tinno Milk can. E. C. Plank Mine cage signal J. H. Robertson Milk can. E. C. Plank Mine cage signal J. L. Beyer Mine drill jack J. E. Powell Mirror. S. W. Eddy Molding machainsm. M. F. McCarthy Mop head. A. Laekey Mop holder. J. L. Johnson Molding mechanism. M. F. McCarthy Mop head. A. Laekey Mop holder. M. and M. Bookstaber Motor attachment, Electric.

Multifloor kiln. E. W. A. Lawrence Multifloor kiln. Electric. C. B. Rauch Minsical instruments, Mechanical player for Miniscal instruments, Mechanical player for Non slipping device. L. A. Zellers Not sheets, Expression marking for. Non slipping device. L. A. Zellers Not slipping device. L. A. Zellers Not slipping device. L. A. Zellers Not slipping device. L. A. Zellers Not slock. P. R. Hinkle Nut lock. J. C. C. Kadel Oar lock. F. D. Starin Oil binner. F. Hendricks Oil cup. To shafts. M. H. R. Cox Nut lock. P. R. Hinkle Nut lock. J. C. Deuchler Nut, Sectional C. C. Kadel Oar lock. F. D. Starin Oil binner. F. Hendricks Oil cup. To shafts. M. H. D. Cox Multock. P. R. Hinkle Nut lock. J. C. Deuchler Nut, Sectional C. C. C. Kadel Oar lock. F. D. Starin Oil binner. F. Hendricks Oil cup. To shafts. M. H. D. Penis Ore sampler. M. H. Drury Padlock, Permutation. P. F. Hendricks Oil cup. To shafts. M. W. Litsey Oiler for shafts. M. W. Litsey Oiler for shafts. M. W. Deeg Oiler, Road. M. C. C. Kadel Oar lock. F. D. Starin Oil binner. G. R. E. Rose Packing, Labricating. W. H. Drury Padlock, Permutation. P. W. Sarin Oiler, Road. M. W. H. Denis Ore sampler. M. C. B. G. Rose Packing, Labricating. F. M. Elledge Painter's guard. R. D. Kenyon et al. Paper backet and making same. P. G. Prow, Antonione... O. H. Enfeome et al.
Preumatic control system... L. S. Nash
Pneumatic despatch tube apparatus....
L. G. Bartlett
Poles, Preserving wooden... J. D. Hilliard
Power transmission, Electrical...
H. Kleinschmidt
Printing maehine... S. C. Cox
Printing press inking device. W. N. Bates
Propeller... O. A. Danielson et al.
Propulsion means... V. C. de Ybarondo
Propulsion mechanism, Marine...
O. Evinrude
Pump for use in pumping wood pulp and
similar substances. J. R. Kinney
Pump, Windmill... W. Snee
Pumps, Automatic by-pass for...

P. Z. Kohlhaas
Rack cutting machines, Feeding blanks to...
N. H. FayN. H. Fay

Radium compounds, Extracting	Stove shelf and grease guard, Collapsible
E Illzer et al	
Rail anchorH. H. Sponenburg	J. Geer et al. Strainer (2 pats) E. E. Hauer
Rail jointC. J. Kashner Rail jointF. McFadden	Straining apparatus, LiquidE. E. Hauer Strawberry and raspberry extract, Making.
Rail securing means	E. G. Ressencourt
Rails, RerollingJ. E. York	Street indicator
Railway cross tieJ. W. Richardson	Street sweeper and collector, Combined
Railway rail and jointW. Kaylor Railway rail brace spikeF. E. Jonah	Stumping machine
Failway rail fastenerJ. J. White	Suit cases and the like, Attachment for.
Railway tie	L. Spiro
Railway tieG. E. Humphrey	Supporting devices, Appliance for
Railway tieJ. L. Arnold	To this are an abis a settle broad. A. B. Carver
Railway tie	Talking machine attachmentF. W. Schmidt Talking machine disks, Device for anto-
Railway tie, MetalJ. S. McAnarney	Talking machine disks. Device for anto-
Railway tie, MetallicJ. M. Levier	matically stopping
Railway tie, MctallicJ. J. White	Talking machine sound boxJ. C. English
Razor stropping and honing machine C. Alter	Telegraphy and telephony, Aerial for wirelessW. E. D. Stokes, Jr., et al.
Recording device	Telegraphy and telephony Receiving circuit
Refrigerating structures, Means for cooling	Telegraphy and telephony, Receiving circuit fore wireless. W. E. D. Stokes, Jr., et al.
the interior of N. F. Anderson	Telephone system, Lock-ont
Refrigerator W. A. Chase	N. E. Norstrom
Refrigerator H. N. Holcomb Refrigerator car G. C. Bohn	Tenon joint fastenerJ. S. Graham Terminal block for high tension apparatus
Resilient wheelP. Decauville	T. Hubert
Retainer, Automatic	Test indicatorG. W. Bowers
Reversible spring	Textile conditioning apparatus
Reversing mechanism	Therapoutic apparatus Floatromagnetic
	Therapentic apparatus, Electromagnetic sound waveE. Bachelet
Rock drilling engine, Pnenmatically oper-	Thread guide
ated	Ticket holder, Car
Rod bending apparatusE. L. Brown, Jr.	Tie W. G. Chipley Tie and rail fastener Sowers
Rolling apparatns, SteelJ. E. York Rotary engineF. Yantes	Tie and rail fastener H H Wiggins
Rotary engineF. D. Lambert et al.	TireJ. W. and G. F. Burgess
Rotary engine and pump, Combined	Tire. J. W. and G. F. Burgess Tire, Armored pneumaticC. F. Williams
Potagy explosive engine	Tire protectorM. J. Frambach et al.
Rotary explosive engine	Tire, VehicleW. R. Barbour Tobacco pipeG. Knochenhauer et al.
Saddle blanket and horse cover, Combina-	Tobacco receptacle
tionJ. McComas et al.	Tool box metal . W. H. and J. H. Sells
Safe and vault doorE. S. Pillard	Tool, CombinationW. H. Stuart et al.
SandalN. Hernandez Sash holderC. II. Westen	Tool, CombinationJ. W. Morrison Tool, MultipleV. H. Keller
Saw frame, GangT. S. Wilkin	ToyR. L. French
Saws, Means for correcting irregularities in bandJ. M. Culbertson	Tov. Figure
in bandJ. M. Culbertson	Traffic system, Railway, road, water, and
Sawing and splitting machine, Wood	like
Seale F. P. Dunn	Train lighting systemJ. F. Crouch et al. Trestle, AdjustableA. C. Boyer
Scale. B. W. King Scale, Logarithmic. J. M. Michaelson	Trolley poleJ. Coau
	Trnek
Screeu and window frame therefor	Tubes to discover obstructions therein,
Screen frame, Extension wiudow	Apparatus for testingV. C. Gilpin TurbineF. F. Rathke
	Turbine, SteamG. W. Gilleland
Seal for car doors, shipping receptacles, &c.	Typewriter
J. J. A. Miller	Typewriter attachmentJ. B. Vidal
Sewing machine	Typewriting machineA. T. Brown Typewriting machine (2 pats)
Sewing machine folderC. E. McElli et al. Sewing machine thread controlling mechan-	Typewriting machine (2 pars)
ism	UmbrellaJ. C. Redford
ism	Valve
Shade bracket and hanger arm, Combined	ValveO. Faller
E B Daum	Valve
Shade trimmer, WindowC. W. Dawson	Valve and means for operating same, Re-
Shade trimmer, WindowC. W. Dawson Shaft bearingM. Wenger Shock absorberW. N. Border et al.	ducingJ. A. Hicks
Shock absorberW. N. Border et al. Shoe shine protectorR. B. Luther	Valve, Engineer'sJ. Reichmann
Shoes Machine for operating on	Valve for gas producer plants, Purge N. H. Henderson
J. H. Richardson	Valve GasJ. A. Herrick
Shovels, Track layer for steam	Valve mechanismL. S. Chadwick
Sign structureJ. Smith et al.	Valve mechanism. Fluid controlling
Skips or other vehicles in mine shafts and	Valve, Mixing
the like. Means for loading	Valve, Pressure flushJ. F. Diaz
J. Whitford et al.	Vegetable erusher and strainer
Skirt gage E. Neilsen Skirt gage S. K. Wilson	S. Abitbol et al. Vehicle brake J. D. Jarrett
Skirt gageS. K. Wilson Skirt markerM. C. Johnson	Vehicle brakeJ. D. Jarrett Vehicle steering gear and control mechan-
Skiving machineJ. H. Pope	ism, Motor
SledJ. Anderson	Vehicle wheel
Sled, Self propelledN. Yach	Vehicle wheel
Sliding eatch lockP. Nitzsche Small arm, Automatic	Vehicles, Compound spring suspension for J. J. Heilmann
	Vehicles, Non skid device for motor road
Solidifying crystallizable mixtures without	Garrett
substantial crystallization and forming strips thereof, Apparatus for	Vending machine
F. I. Du Pont	VentilatorD. C. McCandless Vibration recorder for automobiles and oth-
Spark plug (3 pats)J. M. Dayton	er vehiclesE. S. Phelps
Speciacle templeE. Barnes	Wagon brake. J. Pilman Wagon Dump. R. M. White et al.
Speed changing mechanismA. R. Murray	Waghboard C. Christopeon
Speed indicatorO. Bothe et al. Speed mechanism, Change. F. M. Chapman	Washboard
Spike	Water column
SpikeJ. L. Jossart Spindle dividing head, Multiple	Water column
Spindle dividing head, Multiple	Water heater (2 pats)H. E. Townsend Water meterJ. M. Burton
Spoke joint	Wave energy motorC. M. Rhodes
Squares, Angle gage forF. E. Smith	Web operating mechanism
Stamp affixing and envelop scaling ma-	
chine	WeederA. E. and E. G. Quiekel Weighing device, Electrically controlled
Stamp mill operating mechanism	W. S. Smith
	Weighing machine. Proportioning
StanchionJ. B. Oleson	R. M. Caldwell et al.
Steam, Apparatus for regulating the supply ofJ. F. Hey	Welding chain links, Machine for electrically
Steam generator	Welding sheet metalO. C. Knine
Steering gear for shipsJ. S. Blauvelt	Welding sheet metalO. C. Knipe Well easingB. U. Hiester
Stem and sleeve. Dust proof	Well easing enffer
Stitching machine for pamphlets and sim-	Well casing slitter and perforatorF. M. Lovell
ilar articles, ThreadH. L. Roberts	Wells, Apparatus for constructing sand
Stoker, UnderfeedF. G. Saylor	A. P. Schnyder
Stool, chair and the like, Adjustable	Wheel
Stop mechanism for powder driven ma-	Wheel construction E. E. Slick Whiffletree attachment W. W. Bates
chinery, AntomaticE. P. Jennings, Jr.	Whip attachment
Stove	Windmill
Mr. C. D	WindowG. B. Evans
Stove attachment, GasM. S. Rose	

Stove shelf and grease guard, Collapsible	
Strainer (2 pats)E. E. Hauer	
Straining apparatus, LiquidE. E. Hauer Strawberry and raspberry extract, Making.	
Street indicator	
Street sweeper and collector, Combined J. T. Whittome	
Stumping machine	
Supporting devices, Appliance for	
Talking machine attachment	
Talking machine disks, Device for anto-	
Talking machine sound box. J. C. English	
lessW. E. D. Stokes, Jr., et al.	
fore wireless. W. E. D. Stokes, Jr., et al.	
Telephone system, Lock-ont	
Terminal block for high tension apparatus	
Stove shelf and grease guard, Collapsible Strainer (2 pats) E. E. Hauer Straining apparatus, Liquid E. E. Hauer Strawberry and raspberry extract, Making. Street indicator W. D. Seale Street sweeper and collector, Combined Street sweeper and collector, Combined Street sweeper and collector, Combined Street sweeper and collector, Combined Stumping machine J. T. Whittome Stumping machine M. D. Meek Suit cases and the like, Attachment for T. A. B. Carver Talking machine attachment T. A. B. Carver Talking machine disks, Device for antomatically stopping J. Louvet Talking machine disks, Device for antomatically stopping J. Louvet Talking machine dosks J. C. English Telegraphy and telephony, Acrial for wire- less W. E. D. Stokes, Jr., et al. Telegraphy and telephony, Receiving circuit fore wireless. W. E. D. Stokes, Jr., et al. Telephone system, Lock-ont Tenon joint fastener J. S. Graham Terminal block for high tension apparatus Test indicator G. W. Bowers Text indicator G. W. Bowers Textile conditioning apparatus Therapentic apparatus, Electromagnetic sound wave E. Bachelet Therad guide W. O. Aldrich Ticket holder, Car A. E. Hindle File W. G. Chipley Tie and rail fastener M. E. Burgess Tire, Armored pneumatic C. F. Williams Tire protector M. J. Frambach et al. Tire, Vehicle W. R. Barbour Tobacco pipe G. Knochenhaner et al. Tool, Combination J. W. and G. F. Burgess Tire, Armored pneumatic C. F. Williams Tire protector M. J. Frambach et al. Tool, Combination J. W. And G. F. Burgess Tire, Armored pneumatic C. F. Williams Tire protector M. J. Frambach et al. Tool, Combination J. W. And G. F. Burgess Tire, Armored pneumatic C. F. Williams Tire protector M. J. Frambach et al. Tool, Combination J. W. And G. F. Burgess Traffic system, Railway, road, water, and like The combination W. J. Herbst Traffic system, Railway, road, water, and like The com	
Therapeutic apparatus Electromagnetic	
sound waveE. Bachelet	
Ticket holder, CarA. E. Hindle Ticket W. G. Chipley	
Tie and rail fastenerC. Sowers Tie and rail fastenerH. H. Wiggins	
TireJ. W. and G. F. Burgess	
Tire protectorM. J. Frambach et al.	
Tobacco pipeG. Knochenhauer et al.	
Tool box metalW. H. and J. H. Sells Tool CombinationW. H. Stuart et al.	
Tool, CombinationJ. W. Morrison	
Toy R. L. French Toy Figure W J. Herbst	
Traffic system, Railway, road, water, and likeR. C. Sayer	
Train lighting systemJ. F. Crouch et al. Trestle, AdjustableA. C. Boyer	
Trolley poleJ. Coau TruckII. C. Grant	
Tubes to discover obstructions therein, Apparatus for testingV. C. Gilpin	
Turbine	
Typewriter	
Typewriting machineA. T. Brown Typewriting machine (2 pats)	
Umbrella	
ValveR. W. Wood ValveO. Faller	
Valve	
Valve and means for operating same, ReducingJ. A. Hicks	
Valve, Engineer'sJ. Reichmann Valve for gas producer plants, Purge	
Valve, GasJ. A. Herrick	
Valve mechanism, Fluid controlling	
Valve, MixingE. F. Niedecken	
Vegetable erusher and strainerS. Abitbol et al. Vehicle brakeJ. D. Jarrett Vehicle steering gear and control mechanism, MotorG. W. Dunham	
Vehicle brakeJ. D. Jarrett	
ism, MotorG. W. Dunham	
Vehicle wheel	
Vehicles Non skid device for motor road	
Vending machineF. G. Garrett	
VentilatorD. C. McCandless Vibration recorder for automobiles and oth-	
er vehiclesE. S. Phelps Wagon brakeJ. Pilman	
Wagon DumpR.M. White et al. WashboardC. Christenson	
Watchmaker's toolE. Campbell Water columnA. Van Brnnt	
Water eooler (Reissue)A. N. Rose Water heater (2 pats)H. E. Townsend	
Water meterJ. M. Burton Wave energy motorC. M. Rhodes	
Web operating mechanism	
Vehicle steering gear and control mechanism, Motor	
Weighing machine, Proportioning	
Welding chain links, Machine for electrically	
Welding sheet metalO. C. Knipe	
Well easing cutter	
Welding chain links, Machine for electrically	
Wells, Apparatus for constructing sand	
Wheel H. Mayer Wheel construction E. E. Slick Whifflaton attachment W. W. Bates	
Whiffletree attachmentW. W. Bates Whip attachmentC. A. Jacky WindmillH. Schmidt	

Window and screen attachmentR. Mohr Window elevating pivot fixture
Window frame
Wire fastening, GroundM. H. Lawrenee Wire stretcherG. L. McMillen Wood turning machine, Automatic
Wrapping machineJ. J. Smith
Wreneh
Zinc sulfid, Manufacture ofJ. Koetschet et al.

Issued August 29, 1911.

MECHANICAL DATENTS

MECHANICAL PATENTS.
Account and cash register, Combined P. A. McCaskey Acetates, Making
Acetates, MakingH. O. Chute et al. Acids, Raising the melting points of fattey.
Aconstic diaphragmJ. H. Massey
Adding machineF. C. Rinsche Aerial propulsionF. L. Bartelt
Aeroplane. H. L., A. E., and H. O. Short
Aeroplane B. T. B. Hyde et al.
Air brake release deviceA. W. Rollings
Airship
Amusement deviceA. M. Langworthy Animal trapG. Halinka
Ankle joint
Acetates, Making. H. O. Chute et al. Acids, Raising the melting points of fattey. A. Solomonoff Aconstic diaphragm. J. H. Massey Adding machine. F. C. Rinsche Aerial propulsion. F. L. Bartelt Aeroplane. V. P. Fleiss Aeroplane. H. L., A. E., and H. O. Short Aeroplane. B. R. Alexander Aeroplane. B. T. B. Hyde et al. Air brake. J. N. Temple Air brake release device. A. W. Rollings Airship. S. D. Wheeler Airship. H. Thaden Airships, Ballon system for J. Schutte Amusement device. A. M. Langworthy Animal trap. G. Halinka Ankle joint. N. F. Harrison Automobile alarm, Phonographic. J. H. Erickson Automobile fender. H. D. Barnes Awning. W. Connor Axle. H. Thller Axle Automobile. L. Sharp
Axle
Bag fastenerJ. Ehmann Bag filling machine
Balloon envelop material J. Rundes
Bands, labels, &c., Mechanism for feeding.
Awning. W. Connor Axle. H. Tuller Axle, Automobile. L. B. Sharp Bag fastener. J. Ehmann Bag filling machine. E. Jagenberg Bale hook. A. R. Landes Balloon envelop material. J. Rund Bands, labels, &c., Mechanism for feeding. W. C. Briggs Barrel forming machine, Bilge. W. C. Briggs Barrel making machine G. J. Mayer Bayonet joint. W. O. Barnes Bearing, Antifriction R. Linn Bearing, Roller. J. Newmann Bed. G. C. Gumm
Bayonet joint
Bearing, RollerJ. Newmann
Bed fasteningF. Paine
Bed rail fastening, CornerM. B. Okun Bed spring bottom tightener
Bed spring, Woven wireA. Prince
Belt, Hunting band D. H. Franks
Boat
Bolster, Truck. R. E. Frame et al. Book holder. M. J. Stark Jr.
Bed rail fastening, Corner. M. B. Okun Bed spring bottom tightener. F. W. Ziemendorf Bed spring, Woven wire. A. Prince Beer preserver. C. Bergsvik Belt, Hunting. D. H. Franks Belt, Multiple band. H. Desmolieres Boat. P. I. Andrews Bolster, Body. R. E. Frame et al. Bolster, Truck. R. E. Frame et al. Book holder. M. J. Stark, Jr. Book rest, Photo frame, and the like for tables and otherwise, Adjustable. F. Harris Boot and shoe uppers, Forming. K. Engel Bottle or jar, Non-refillable. J. Buktenica Bottle or the like, Non-refillable. A. R. Edwards Bowl, Sugar. G. A. Henriquez
Boot and shoe uppers, Forming K. Engel
Bottle or jar, Non-refillable Buktenica Bottle or the like, Non-refillable
Bowl, Sugar
Brunsh, FountainA. F. L. von Babo Brunsh, FountainA. D. Cardinet
Brnsh, ShavingII. V. Hardman BuckleR. F. Bartel
Cabinet, PhotoprintingJ. F. Ware
ducing (2 pats.)F. W. Frerichs Caliners Vernier H. Hauser
ducing (2 pats.) F. W. Frerichs Calipers, Vernier H. Hauser Can opener J. J. Martz Cap or hair guard, Toilet I. Hill
Car coupling mechanismA. A. Rosengren Car coupling, RailwayS. D. Rich
Car derailerJ. A. Browning Car fenderN. Willard
Cap or hair guard, Toilet1. Hill Car coupling mechanismA. A. Rosengren Car coupling, RailwayS. D. Rich Car derailerJ. A. Browning Car fenderN. Willard Car fenderG. H. Miller Car locking mechanismH. Rowntree Car stakeF. E. and A. L. Rollins Car wheelJ. M. GoodKnight
Car wheelJ. M. GoodKnight
Car wheel. J. M. GoodKnight Carbon sheet P. Hano Carbureter J. O. Hobbs Carbureter T. J. Hart Carbureter E. Maynard Cartridge P. G. Clyne
Carbureter E. Maynard Cartridge R. G. Clyne
Centrifugal separatorW. R. Macklind CesspoolC. C. Sofleiss
Chain adjuster, EyeglassE. R. Matters Change making machineJ. R. Conrad Chaireal Residual J. R. Conrad
Chure, Coal C C Wallace
Cider mill presserR. W. Brooks Cigar and cigarette tube or holder
Carbureter. E. Maynard Cartridge. R. G. Clyne Centrifugal separator. W. R. Macklind Cesspool. C. C. Sofleiss Chain adjuster, Eyeglass. E. R. Matters Change making machine. J. R. Conrad Chemieal engine (Reissue). J. A. Thomas Chnrn. A. G. Hunter Chute, Coal. C. G. Wallace Cider mill presser. R. W. Brooks Cigar and cigarette tube or holder. R. C. Aeutt Circuit eloser, Time limit. F. B. Corey Clock, Ship's bell. W. K. Menns Closet bracket, Crystal. R. Jasper Cloth to stentering and other machines, Apparatus for feeding and guiding (2 pats). J. Kay Clutch. M. W. Thompson Coffee tablet. L. B. G. Carreras Collar, Horse. J. S. Aschliman Collar pads, Making. G. A. Reynolds.
Closet bracket, Crystal. R. Jasper
Apparatus for feeding and guiding (2
ClutchM. W. Thompson Coffee tabletL. B. G. Carreras
Collar, HorseJ. S. Aschliman Collar pads, MakingG. A. Reynolds.

Conerete conduit, Reinforced M. D. Pra Conerete mixing machine.	att I	E
Couerete work, Device for making expersion joints in	an. an- ery I	F
Concrete conduif, ReinforcedM. D. Pr. Concrete mixing machine	am I ige I al (F G
Cot and stretcher, Resilieut ambulance. J. F. Sm.	ith (G
Cotton goods Wyootmout of moreowized	- (G
Cotton goods, Treatment of inference in the country of the Counter, Shaft speed F. E. Bottig Counter, Shaft speed F. B. Sanbo Counting apparatus for coins and checks	ger (
Country, Shart speed	s (j
Coupling cushion bufferJ. A. Jacks Cover and socket piece, Combined J. Hamilt	son C	G
Cover, Vessel. S. Ski Crucible furnace. E. H. Schwa:	iba (rtz (ma (G
Cover and socket piece, Combined. J. Hamilt Cover, Vessel	ges C	G
Current limiting deviceM. G. Diaz et Cycles, Chain adjustment device for C. G. McKell	ar. lar	
Cycles, Chain adjustment device for rewheel fittings of C. G. McKell Davit	ear (lar ian (
Decorticating the fibrous leaves or stems plants, Machine for. E. Wrig Dental bandpiece. T. T. Al Dental plugger. W. F. Gub Derrick, Portable. A. N. Hadd Designing device. T. Lu Detachable wheel. B. B. II Direct heat drier. W. R. Mackli Disinfectant, Making a. E. Lconhard Disk drier, Rotary. W. R. Mackli Display box front fastener. A. F. Urb Display rack. N. J. Little ct Display rack. N. J. Little ct Display rack. A. C. S. Robins Door control devices, Cushion mechanifor pneumatic. JI. Rownton Door for street cars or other purpos Divided. J. B. Burddoor lock. N. Triantal Door lock. N. Triantal Door lock. N. Triantal Door lock. N. Triantal Door lock. S. Robins D. Macfarla Door lock. S. Robins D. Macfarla Door lock. N. Triantal Door lock. N. Triantal Door lock. Robins D. Macfarla Door lock. Robins D. Macfarla D. M	of I ght I sin I	[-]
Dental plugger W. F. Gub Derrick, Portable A. N. Hadi	itz I	Đ
Detachable wheel B. B. II Direct heat drier W. R. Mackli	ind I Iill I ind I	
Disinfectant, Making aE. Leonhar Disk drier, RotaryW. R. Mackli Display box front fastenerA. E. Urb	rdt iud I oan I	
Display rackN. J. Little ct Display rackA. C. S. Robins	al.	
for pneumatic	ree ses, I	
DividedJ. B. Burd Door, GrainO. Macfarla Door lockN. Triantaí	ett ine I filu	
Door lock. N. Triantaf Door operating devices, Cushioning medianism for P. R. Form	eh- I an I	
auism for	an I ree I wn I	H
Door operating mechanismT. R. Brown operating mechanismH. Rownt Door operating mechanism, Pneumatic	wn I ree I	E
Door encycting machanism Promustic	(4]	
pats.)T. R. Bro Doors, Safety mechanism for power cratedH. Rowutrec et	op- l al. ow l	r.
Drinking apparatus, Sanitary	nd I	ľ
crated. H. Rowutree et Dredge	al. ius J	
Easel aud the like, Artist's studio W. B. Macdoug Electric apparatus, VaporE. Thoms	all sou	ľ
Electric apparatus, Vapor E. Thoms Electric conduit outlet boxes, Drop eccap for C. S. Houss Electric furnace L. Yngstr. Electric ignition devices, Circuit breal for A. R. Mos Electric machine, Dynamo . F. B. How Electric oscillations, Apparatus for p ducing J. Murg Electric switches, Self-adjustable contamaker for F. W. You Electrical conductor fastening R. H. Klaud Electrical distribution system . E. Thoms Electric cell P. McDorm	ord I ier J om I	I J K
Electric ignition devices, Circuit breal for A. R. Mos	ser I	I.
Electric oscillations, Apparatus for p ducingJ. Murg	ro- I	L
Electric switches, Self-adjustable conta maker forF. W. You Electrical conductor fastening	ng I	L L
Electrical distribution system. E. Thoms	der son J	Γ.
Electrical distribution system. E. Thoms Electric cell	ds. I	L
Elevator safety deviceJ. M. Faulki Elevator systemJ. W. Mal Emulsifying apparatusH. N. Brawner,	her I bbs I Jr. I ler I]. [. [.
Endoscope (2 pats.)R. H. Wapp Engine sparking igniter, Internal comb- tion	ler I us- ney I	
Engine starting crankC. E. Ca ExcavatorH. H. Har Enkris folding mocking. H. Parker et	ril I ris al. I	Į,
Fan. Spring motorL. Lefeby Farm gateJ. N. Neal ct	ar. vre al.	
Feed water heaterG. F. Paters	oyl I son	
FenderE. B. Staffe Filament mountingE. S. Gardr File machine Automatic	ord I ner I	L
Engine sparking igniter, Internal coubtion. C. A. Sticker Engine starting crank. C. E. Ca Excavator. H. H. Har Fabric folding machine. H. Barker et Fan. Spring motor. L. Lefeby Farm gate. J. N. Neal ct Faucet handle, Self closing. J. Muel Feed water heater. C. H. Ke Feed water regulator. G. F. Paters Fender. E. B. Staffe Filament mounting. E. S. Gardt File machine, Automatie. H. and J. H. Bess Filing device for sheet music. T. H. Perficients Filing machine attachment. C. D. Terr Films and the like, Apparatus for suspensing. E. A. Iva	$ \frac{\text{ser}}{\text{eld}} $	Į.
Filing machine attachmentC. D. Terr Films and the like, Apparatus for suspen	eld I	L
Filter, OilF. E. Colli Filter, WaterJ. F. Stocki	$_{ m ins}^{ m trs}$ $_{ m ing}^{ m I}$	
Fire escape	ike ore I	L
Films and the like, Apparatus for suspering. E. A. Iva Filter, Oil. F. E. Colli Filter, Water. J. F. Stocki Fire cscape. W. I. La Fire escape. M. F. Go Fireproof blocks, Apparatus for making R. A. Hen Fireproof window construction. E. H. Lunk Fish trap, Floating. N. Jonass Fisbing reel. J. A. Jernst Fishway drum screen. H. B. Johnst Flat irons, Heat retainer for E. A. Fla	ley I	
Fish trap, Floating. N. Jonass Fisbing reel. J. A. Jernsto	son I son I edt I ton I	1
Flax and other fiber-vielding plants, A	Ia-	Ŋ
Flying machine P. C. Hopki	ins I	1
Flying machine equilibrium apparatus	ius I	1
Flying machine equilibrium apparatus A. F. W. Macmar Folding box H. E. Steff Form, Stocking drying H. A. Ques Fuel support H. W. Tr Fume destroying composition. H. Sanbo	ter i	N
Furnaee	ley	N

Furnace charging apparatus, Blast	7
Furnace door opeuer and closer	7
currow opener, Disk. E. R. Beeman et al. currow opener, Disk	<i>y</i> <i>y</i>
Garmeut supporterC. C. Hackney Gas burnerII. Lyon	y
Gas cleaning apparatusJ. P. Dovel Gas generatorL. H. Berry	7
Gas producer apparatusJ. A. Herrick Gas purifierJ. P. Dovel	7
Gas regulators, Attachment to auto A. D. Purtle	N
Gearing control mechanism, Change speed.	y y
Gearing, TransmissionH. A. Budde	N
Grain elevator, PortableJ. F. Valleutyue Grapbophone attachmentJ. A. Soler	N
Grate	N
Grinder attachment, Disk	Ċ
Grinding watch crystals, Machine for	
Iair cutting device. R. Campbell Iarness attachment. C. Clark	C
lat anchor, CollapsibleJ. A. Sharp Lat anchor, CollapsibleM. D. Fisher Lav rake	C
Tay rake or sweep rakeJ. W. Little et al. Ieadlight, Vehiele	0
Gripper	Ĭ
Icating apparatus, Automatic pilot light controlled	1
leel and sole protectors for boots or shoes, Machine for settingII. W. Winter	I
Iclical surfaces, Apparatus for machining.	I I 1
L. Rosen Hoe, Expanding horseJ. Bain	I
Ioop clamp W. H. Holmes Iopper mechanism R. L. Wileox Lorse data short W. A. Craig	I
Iorse detacherA. R. Mebane IoseE. T. Greenfield	Ι
Iose couplingF. A. Schneider Iumidifying apparatus and meaus for coutrolling same	I I I
cc cap R. A. Barues ce cream freezer head F. Tyson	I
L. R. Steel Heat insulating vessel C. Hubert Ieating apparatus, Automatic pilot light controlled I. J. O'Malley Ieating furnace W. W. Liniuger et al. Ieel and sole protectors for boots or shoes, Maehiuc for setting II. W. Winter Iclical surfaces, Apparatus for machining W. N. Venner Iod or bin for coal or other materials L. Rosen Ioe, Expanding horse J. Bain Ioop clamp W. H. Holmes Iopper mechanism R. L. Wileox Iorse detacher W. A. Craig Iorse detacher W. A. Craig Iose coupling F. A. Schneider Iumidifying apparatus and meaus for coutrolling same J. I. Lyle cc cap R. A. Barues ce cream freezer head F. Tyson ce, Treating water in manufacturing C. C. Peck gniter, Fuel W. A. Dyer ueubator alarm L. J. Westfall	H
C. C. Peck gniter, Fuel. W. A. Dyer ueubator T. Gill ncubator alarm. L. J. Westfall ncubator temperature regulator I. B. Havourd ndicating mechanism E. E. Yaxley nsecticide or fungicide compound R. H. Hutchinson nternal combustion cugine. W. E. Adams nternal combustion engine. O. C. Steglat ack W. R. Hardesty et al. Knitted fabric M. J. Fisher abel gumming and attaching machine E. Jagenberg acing hook M. R. Francis amp bracket F. J. Sears amp fixture, Electric J. H. Kiugsley amp, Oil A. G. Kaufman amps ocket L. Gudeman amps, Automatically lighting and extiguishing was aud other F. D. Page amps, Means for eliminating the glare of J. W. Dalman antern, Magic A. Paoli antern slide moving device J. Leopold atch J. E. Brooker atch, Gate E. C. Dickinson athe O. W. Schaum avatories and the like, Manufacture of R. E. Crane life saving device L. C. Zwerdling et al.	Î
ndicating mechanismE. E. Yaxley	Î
nternal combustion cugine. W. E. Adams	Î
Anternal combustion engine. O. C. Stegiat fackW. R. Hardesty et al. Knitted fabricM. J. Fisher	I
abel gummiug and attaching machine E. Jagenberg	Ĭ
Lamp bracket F. J. Sears Lamp fixture, Electric J. H. Kiugsley	I
amp, OilA. G. Kaufman amp socketL. GudemanL. Gudeman	Î
guishing was aud otherF. D. Page amps, Means for eliminating the glare of.	Ī
antern, Magic	I I I
atch. J. E. Brooker atch, Gate E. C. Dickinson	Î
Lavatories and the like, Manufacture of	I
Life saving deviceL. C. Zwerdling et al. Life saving device for submarine vessels D. and J. Channell	I
ife saving deviceL. C. Zwerdling et al. ife saving device for submarine vesselsD. and J. Chappell inoleum, Making plates of linoleum composition for producing blocks for the manufacture of continuously-gained	Î
inanufacture of continuously-gained F. E. Fritz Liquid applying and polishing device	F
Aquid cooler B. Johnson	I
for delivering	I E I
Januids, Device for drawing off measured uantities of C. L. Newland	I I
ocomotive A. Stucki oom J. A. Bidwell	I
Ludsay Loom let off mechanism, Narrow ware,	I I
ubricant glandW J. Richards Jail bag fastenerJ. A. Scott	I
anism W. H. Joues dail car bag rack A. Marti	I I I
Mail catcher and craneJ. Hicke Manicuring implementW. C. Baird Marine engine Two cycle C. W. Lasker	I
Jattress	I I
Mercury compound, OrganicM. Engelmanu Metal, AntifrictionW. Wyers Metal bands, wire, &c from electrolytic	I I I
iquid applying and polishing device. C. Frank iquid cooler. L. B. Johnson iquid in measured quantities, Apparatus for delivering A. Jacobsou iquid testing device, Centrifugal. J. Boekel iquids, Device for drawing off measured quantities of C. L. Newland lock coustruction, Cylinder. H. G. Voight locomotive. A. Stucki locom. J. A. Bidwell locom. J. A. Bidwell locom. H. Liudsay loom. H. Liudsay loom et off mechanism, Narrow ware. F. Benz. Jr. lubricant gland. W. J. Richards lail bag fastener. J. A. Scott lail bag receiving and delivering mechanism. W. H. Joues dial car bag rack. A. Marti lail car bag rack. A. Marti lail carber and crane. J. Hicke lanicuring implement. W. C. Baird latine engine, Two cycle. C. W. Laskay lattress, Sanitary. L. H. Vincent letal, Antifriction. W. C. Stapely lattress, Sanitary. L. H. Vincent letal bands, wire, &c., from electrolytic iron, Manufacture of W. Pfanhauser letal body and making the same, Com- pound. F. Monnot	I
Metal sheets, Machine for partially loosening or separating	I
Metals and alloys, Treatment of	I

Metallic tie	and rail	fastener.	
Methoxymcthy	lsantalol.	M. Dol	irn ct al.
Millboard ma Mine elevator	chine		S. Scooler Channon
dirror pivot.	rt	I. E.	E. Grove Hoogner
dixing and g	grinding m	achine G. N	. Kinnell
Moldiug macl Motor speed	regulator,	Electric.	Rathboue
Motor startin	ng device	J. T. Kalv for polyj	ohase cit-
Mouse trap Lower Lawn		ii\	Questroy
Jowing mach	ine ine rake	R. attachmen	A. Lacey
lusical instr	uments, A	E. Icans for	Severson synchrou-
ously operat Nail set, Floc	ting riug		S. Waters B. Weedou
vicotin extra ratus Vut loek	.eting and	distribut	ing appa-
Nut locking	deviee	II. I	. Shriver
Odometer (2 Dil burner s	pats) tand	R. G.	II. Veeder Kirkwood
Oil switch Oils from citr	us fruits,	J. M Machine to	l. Wallace or extract-
ing essenti: Optical instru	$A_1 \dots W$. A uments, A	. D. Allpettaching e	ert et al. levice for
Organs and	musical self-playing	instrumer	ats, Wind
Oscillatory m Oven, Electri	otor cal	R.	Rainalter .H. Gray
Oxalates, Mar Oxygeu, Gene	nufacture o rating	ofMau	C. Ellis ran et al
acking Packing mate	rial, Retie	ulated-shee	t
Paper box m	achine	E.	Jagenberg V. Watson
Paper, Manuf Pavcment	acture of.	W. E	Curtis, Jr. Schutte
Percussion to Petticoat, Sel	ol f fitting		J. Thiele
Phonograph		W. and S	H. Miller
rnonograph T Phosphate re and recover	ock. Appa	ratus for	washiug D Ruhm
Pianos, Pneu	matic for	automatic W	G. Betz
Picker cheek. Piliug Sheet.		P. R.	Leveillec J. Latham
'in Pinchers, Las	ting		G. Plant
rineappie cor Pine connecti	ing and siz	C. W	. Cookson
Metallic tie Methoxymethy Milk and crea Milk and crea Millboard ma Mine elevator Mirror pivot. Mirror suppo Mixing aud g Moldiug mael Motor startin cuits Mouse trap Mowing mach Mowing	k row aud	O. l drill cor	J. Watts
Planter, Cnec Plasterer's have low Plow Disk Plow Garden Plow harrow Plog Attach		$egin{array}{lll} \dots & ext{P.} & ext{E.} \ \dots & ext{S.} & ext{J} \ \end{array}$	Wistrand K. Dennis
Plow Disk		H. E.	B. Burt
Plow, Garden Plow harrow	aud attacl		L. Moore H. Myers
Plug, Attaclu Pneumatie ae	ment tion		E. Bown H. Meyer
Pole Pole and bill		C. J. Asch	T. Moore auer et al. H. Bachee
Portiere Potato bug c	olleetor		. F. Hall W. Shank
Powder box Power contro	(3 pats.). Iling appli	ance	'. Rochrig
Ing. Attachi Pneumatic ac Pocket book Pool and bill Portiere Potato bug c Powder box Power contro Power transla Precious ston natiou of	ting mech	anismG	Eranquist L. Cassady
Precious ston natiou of Press head Press head Pressure bala Pressure creating pressure gage printing pressure gage propeller oper propeller oper propeller oper protective de la la la la la la la la la la la la la			F. Sale
Press head Pressure bala	ncing mea	ns O. P	Naegelen Ostergren
ressure crea Pressure gage	ung appar P. Differen	tial. W	K. Kiefer R. Brown
Printiug press	ses. Chuck	for paperF. M.	rolls of Keunedy
Propeller Propeller gear	H. r, Balance	and S. H.	. Hawkins B. Holson
Protective de Pulley, funne	vice l. and str	A. B. Ma	arvin, Jr.
nation Pump. Air		T. F. J. J.	Hutchings McIntyre
cump and cl	eaning app	paratus, V .L. L. M	acuum ontgomery
Pump, Autom Pump, Oil Pump, Rotary		P. V. T. Bea	E. Mack
Pump, Rotary Punch presse	s, Automa	J. Rac itic pnenn	elot et al. natic feed
for Rail fastening	gJ.	C. Ba 1. Moorho	umgartner ad et al.
Rail joint Rail joint	• • • • • • • • • •	н. Р. М.	M. Lines Kotlarich
Rail joint Rail spaciug	device	j. W.	II. Sale Kendrick
Railway cros Railway clect	sing ric signal.	J. A. T. J	Snodgrass Empfield
Railway sign Railway spike Railway swite	ai	skane E .D. B. Co	ky et al. J. Bricker udv et al
Rail joiut Rail joint Rail spacing Railway crost Railway sign Railway spik Railway swite Railway swite Railway tie. Railway tie. Railway tie.	ch and fro	gc.	.A. Scohy W. Libke
Railway tie. Railway tie. Railway tie a Railway tie. Railway tie. Razor, Safety Razor, Safety	ind fasten	er. J. <u> </u>	P. Webb Sheatzley
tanway (10 8 Railway tie, Range finder	Composite. (2 pats)		'. A. Saul Hambsch
Razor, Safety Reel support Reelcd merch	, = Pacs.)	L. J	. H. Pace Casgrain
Refligerating	audise, H	olding dev \dots, \dots	vice for . Gardner . Marshall
Refrigerating Register Resilient whe	- systeш ol	G. T.	E. Osborn
xesment whe Resilient whe			

Rim, DemountableJ. Baker Rim, DemountableE. C. Phillips
Roller J. Storck Roller
Rolling machine, GearII. N. Anderson Rotary engine (2 pats.)O. P. Ostergren Rotary engine
Rim, Demountable. J. Baker Rim, Demountable. E. C. Phillips Rock entting apparatus. R. Temple Roller. J. Storck Roller track, Adjustable. W. E. Brandt Rolling machine, Gear. H. N. Anderson Rotary engine (2 pats.) O. P. Ostergren Rotary engine. H. L. Bickerton Rotary engine. H. L. Bickerton Rotary engine. H. L. Bickerton Rotary meter. W. L. Wilcox, et al. Rudder operating mechanism. F. Roniss Saddle, Cart. A. D. Goetz Safe. J. E. Casserly Safety guard. J. M. Jones Safety guide. P. Shechan Sash balancing device. J. J. Gilroy Saw adjusting means. B. D. Stevens Saw, Portable power cut off. W. C. Lipscomb Saw set. J. A. Hodgson
Rudder operating mechanismF. Roniss Saddle, CartA. D. Goetz SafeJ. E. Casserly
Safety guard M. Jones Safety guide P. Sheehan Sash balanging darks
Saw adjusting means B. D. Stevens Saw, Portable power cut off
Saw set
Sawmill, Double actingW. T. Bridges Scale, Automatic weighing and recording
Saw set. W. C. Lipscomb Saw set. J. A. Hodgson Saw set, Circular. J. Neuroth Sawmill, Double acting. W. T. Bridges Scale, Automatic weighing and recording car. G. Goetz Scale, Weighing. J. A. McGuire Seales, Height-measuring attachment for. C. B. Car Scraper, Knife blade. C. G. and G. W. Dooley Scraper or beater arm for animal scraping
Scraper, Knife blade
Scraper or beater arm for animal scraping or dehairing machines
Sealing and stamping apparatus, Envelop
Scaling apparatus, HermeticB. Arkell Scaling device, BottlcC. C. Parker
Seat
Self adjusting wrenehB. Witmer SeparatorG. W. Saxton et al.
Sewing machine
Sewing machine presser-foot lifting mechanism
Sewing machines, Variable speed power transmitter for
Scwing receptacie E. Jamerson Shackle
Shade holderJ. Stoddart Sharpening and dressing parts of horse clipping and other mechanisms Manne for
Scraper, Knife blade C. G. and G. W. Dooley Scraper or beater arm for animal scraping or dehairing machines A. Hannaford Seal for car doors, shipping receptacles &c. Sealing and stamping apparatus, Envelop Scaling apparatus, Hermetic B. Arkell Scaling apparatus, Hermetic B. Arkell Scaling device, Bottle C. C. Parker Seat C. Blayloek Security bolt for vehicle wheel tires D. Rowland Separator G. W. Saxton et al. Sewing machine W. Arbetter Sewing machine needle mechanism. Sewing machine presser-foot lifting mechanism w. H. Stedman Scwing machine, Shoe M. H. Pearson Sewing machine, Shoe M. H. Pearson Scwing receptacle E. Jamerson Shackle C. A. O. Berner Shade fixture, Window C. Pare Sbade holder J. Stoddart Sharpening and dressing parts of horse clipping and other machines, Means for W. J. Tinline Sharpeniug machine, Razor L. E. Deuison Shears, Attachmeut for A. L. Parker Shipping case C. S. Weatherby Shirt F. G. Baugatz Shock absorber J. T. Costello Shuttle E. Wackerhagen
Shears, Attachmeut for A. L. Parker Shipping case C. S. Weatherby Shirt F. G. Bangatz
Shock absorber J. T. Costello Shuttle E. Wackerhagen Sifter R. G. Cowles Signaling by electromagnetic waves (2 pats)
Signaling by electromagnetic waves (2 pats) R. A. Fessenden
Signaling, ElectricalR. A. Fessenden Signaling receiverR. A. Fessenden Signaling systemH. O. Rugh
Silo E. F. Younee Skirmish machine A. M. McSweeney Skylight
Silo . E. F. Younee Skirmish machine . A. M. McSweeney Skylight . A. H. Jeter Slat clamp . W. B. Gould Slicer, Meat . J. H. Osborne
Silo . E. F. Younee Skirmish machine . A. M. McSweeney Skylight . A. H. Jcter Slat clamp . W. B. Gould Slicer, Meat . J. H. Osborne Sofa or daycuport bed . J. G. Curtis Sound box . J. C. English Sound producing device. Electrical
Silo. E. F. Younee Skirmish machine A. M. McSweeney Skylight A. H. Jeter Slat clamp W. B. Gould Slicer, Meat J. H. Osborne Sofa or davcuport bed J. G. Curtis Sound box J. C. English Sound producing device, Electrical E. E. Clement Sound recording and reproducing instru-
Silo. E. F. Younee Skirmish machine A. M. McSweeney Skylight A. H. Jeter Skylight W. B. Gould Slicer, Meat J. H. Osborne Sofa or davcuport bed J. G. Curtis Sound box J. C. English Sound producing device, Electrical E. E. Clement Sound recording aud reproducing instrument R. Forrest Spectacle nose guard G. H. Day Speed indicator W. F. Brown
Silo. E. F. Younee Skirmish machine. A. M. McSweeney Skylight. A. II. Jeter Slat clamp. W. B. Gould Slicer, Meat. J. H. Osborne Sofa or daycuport bed. J. G. Curtis Sound box. J. C. English Sound producing device, Electrical E. E. Clement Sound recording aud reproducing instrument M. R. Forrest Spectacle nose guard. G. H. Day Speed indicator. W. F. Brown Spigot. W. A. Duubeck Spinning, doubling, and twisting machine, R. Rijey
Signaling by electromagnetic waves (2 pats) R. A. Fessenden R. A. Fessenden Signaling Electrical R. A. Fessenden Signaling receiver R. A. Fessenden Signaling system H. O. Rugh Silo E. F. Younce Skirmish machine A. M. McSweeney Skylight A. H. Jeter Slat clamp W. B. Gould Slicer, Meat J. H. Osborne Sofa or davcuport bed J. G. Curtis Sound box J. C. English Sound producing device, Electrical E. E. Clement Sound recording aud reproducing instrument Spectacle nose guard G. H. Day Spectacle nose guard G. H. Day Speed indicator W. F. Brown Spigot W. A. Duubeck Spinning doubling, aud twisting machine, Ring R. Riley Spool holder D. Marinsky Spool cover E. Theriault
Silo. E. F. Younee Skirmish machine. A. M. McSweeney Skylight. A. H. Jeter Slat clamp. W. B. Gould Slicer, Meat. J. H. Osborne Sofa or davcuport bed. J. G. Curtis Sound box. J. C. English Sound producing device, Electrical. Sound recording aud reproducing instrument. R. Forrest Spectacle nose guard. G. H. Day Speed indicator. W. F. Brown Spigot. W. A. Duubeck Spinning, doubliug, aud twisting machine, Ring R. Riley Spool holder. D. Marinsky Spoou cover. E. Theriault Spun aud woven goods, producing multicolored effects in. M. Becke
Silo
Silo
Silo. E. F. Younee Skirmish machine A. M. McSweeney Skylight A. H. Jeter Slat clamp W. B. Gould Slicer, Meat J. H. Osborne Sofa or davcuport bed J. G. Curtis Sound box J. C. English Sound producing device, Electrical. Sound recording aud reproducing instrument. R. Forrest Spectacle nose guard G. H. Day Speed indicator W. F. Brown Spigot W. A. Duubeck Spinning doubliug, aud twisting machine, Ring R. Riley Spool holder D. Marinsky Spool holder E. A. Wall Spinn aud woven goods, producing multicolored effects in M. B. Eoger Stairway A. B. Todd Stamp handle A. H. Rogers Steam generator of the locomotive type. Stencil duplicating apparatus A. B. Diek Stencil duplicating apparatus (2 pats.) S. O. Edmonds Steps, Protective coveriug for H. W. Flagg
Silo
Silo E. F. Younee Skirmish machine A. M. McSweeney Skylight A. II. Jeter Slat clamp W. B. Gould Slicer, Meat J. H. Osborne Sofa or davcuport bed J. G. Curtis Sound box J. C. English Sound producing device, Electrical E. E. Clement Sound recording aud reproducing instru- ment R. Forrest Spectacle nose guard G. H. Day Speed indicator W. F. Brown Spigot W. A. Duubeck Spinning. doubling, aud twisting machine, Ring R. Riley Spool holder D. Marinsky Spoou cover E. Theriault Spring wheel E. A. Wall Spring wheel E. A. Wall Spun aud woven goods, producing multicol- ored effects in M. Becke Stairway A. B. Todd Stamp handle A. H. Rogers Steam generator of the locomotive type. Stencil duplicating apparatus A. B. Dick Stencil duplicating apparatus A. B. Dick Stencil duplicating apparatus A. B. Dick Stencil duplicating apparatus A. B. Dick Stock thickeuing and washing wachine, Vacuum T. E. Warren Stocking welt former J. F. Roberts Stoopping device, Auxiliary H. Meyer Strainer, Gasoline H. D. Waterhouse Strainer, Gasoline H. D. Waterhouse Strainer, Gasoline H. D. Waterhouse Strainer, Gasoline H. D. Waterhouse Strainer, Gasoline H. D. Waterhouse Strainer, Gasoline H. D. Waterhouse Switch signal, Open G. H. Rice Switch isgnal, Open G. H. Rice Switching mechanism K. F. Kiugwell Table lock, Pedestal extension Tablets of glass, Manufacturing writing Tablets of glass, Manufacturing writing Tablets of glass, Manufacturing writing Tablets of glass, Manufacturing writing Talephone selective signaling ringer Telephone selective signaling ringer Telephone of the local princer The train of the local princer.
Silo
Silo
Silo. E. F. Younee Skirmish machine. A. M. McSweeney Skylight. A. II. Jeter Slat clamp. W. B. Gould Slicer, Meat. J. H. Osborne Sofa or davcuport bed. J. G. Curtis Sound box. J. C. English Sound producing device, Electrical. E. E. Clement Sound recording aud reproducing instru- ment. R. Forrest Spectacle nose guard. G. H. Day Speed indicator. W. F. Brown Spigot. W. A. Duubeck Spinning, doubling, aud twisting machine, Ring. R. Riley Spool holder. D. Marinsky Spool cover. E. Theriault Spring wheel. E. A. Wall Spinn aud woven goods, producing multicol- ored effects in. M. Becke Stairway. A. B. Todd Stamp handle. A. H. Rogers Steam generator of the locomotive type. F. II. Trevithick Stencil duplicating apparatus. A. B. Diek Stencil duplicating apparatus. C. pats.). So Edmonds Steps, Protective covering for. II. W. Flagg Stock thickening and washing Wacuum. T. E. Warren Stocking welt former. J. F. Roberts Stopping device, Auxiliary. H. Meyer Store door hinge. C. M. Genthner Strain clamp. A. O. Austiu Strainer, Gasoline. H. D. Waterhouse Strainer, Gasoline. H. D. Waterhouse Strainer, Gasoline. H. D. Waterhouse Strainer, Gasoline. H. D. Waterhouse Strainer, Gasoline. H. D. Waterhouse Switch signal, Open. G. H. Rice Switching mechanism. K. F. Kiugwell Table lock, Pedestal extension. Tablets of glass, Manufacturing writing. Thread gage. H. L. A. Cornelius Schambony Tank valve ball. L. A. Cornelius Threading device. G. T. Sampson Thread gage. J. A. Adell Threading device. G. T. Sampson Threading device. G. T. Sampson Thread gage. J. A. Adell Threading device. G. T. Sampson Threading device. G. T. Sampson Threading device. G. T. Sampson Thread gage. J. A. Adell Threading device. G. T. Sampson Threading device. G. T. Sampson Threading device. G. T. Sampson Threading device. G. T. Sampson
Silo. E. F. Younes Skirmish machine A. M. McSwerney Skylight A. II. Jeter Slat clamp W. B. Gould Slicer, Meat. J. H. Osborne Sofa or davcuport bed J. G. Curtis Sound box J. C. English Sound producing device, Electrical. Sound recording and reproducing instru- ment. E. E. Clement Spectacle nose guard G. H. Day Speed indicator W. F. Brown Spigot W. A. Duubeck Spinning, doubling, and twisting machine, Ring R. Riley Spool holder D. Marinsky Spool holder D. Marinsky Spool holder D. Marinsky Spool wover E. Theriault Spring wheel E. A. Wall Spinn and woven goods, producing multicol- ored effects in M. Becke Stairway A. B. Todd Stairway A. B. Todd Stairway A. B. Todd Stairway A. B. Todd Stairway A. B. Dick Stencil duplicating apparatus (2 pats.) Steps, Protective covering for II. Trevithick Stencil duplicating apparatus (2 pats.) Steps, Protective covering for II. W. Flags Stock thickening and washing machine, Vacuum T. E. Warren Stocking welt former J. F. Roberts Stopping device, Auxiliary H. Meyer Stocking welt former J. F. Roberts Stopping device, Auxiliary H. Meyer Stocking welt former J. F. Roberts Stopping device, Auxiliary H. Meyer Strainer, Gasoline H. D. Waterhouse Strainer, Gasoline H. D. Waterhouse Strainer, Gasoline H. D. Waterhouse Strainer, Gasoline H. D. Waterhouse Strainer, Gasoline M. E. Layue Switching mechanism K. F. Kingwell Table lock, Pedestal extension Tablets of glass, Manufacturing writing Tablets of glass, Manufacturing writing Tablets of glass, Manufacturing writing Thread gage I. A. Adell Threading device G. T. Sampson Threshing and recleaning machine, Penut H. L., A. E. and H. O. Short Threading device G. T. Sampson Threshing and recleaning machine, Penut H. L., A. E. and H. O. Short Thread gage I. A. Adell Tile and rail fastener H. H. H. Wiggins Tie plate E. H. Bell Tiles aud the like, Device for finishing the ends of drain G. E. Golduer Tin or like plates Apparatus for the mau- ufacture of (Perican) S. C.
Silo. E. F. Younes Skirmish machine. A. M. McSweeney Skylight. A. II. Jeter Slat clamp. W. B. Gould Slicer, Meat. J. H. Osborne Sofa or davcuport bed. J. G. Curtis Sound box. J. C. English Sound producing device, Electrical. E. E. Clement Sound recording aud reproducing instru- ment. R. Forrest Spectacle nose guard. G. H. Day Speed indicator. W. F. Brown Spigot. W. A. Duubeck Spinning, doubliug, aud twisting machine, Ring. R. Rijey Spool holder. D. Marinsky Spool cover. E. Theriault Spring wheel. E. A. Wall Spring wheel. E. A. Wall Spring wheel E. A. Wall Spring wheel F. II. Trevithick Stairway. A. B. Todd Stamp handle. A. H. Rogers Steam generator of the locomotive type. Stencil duplicating apparatus. A. B. Diek Stencil duplicating apparatus. A. B. Diek Stencil duplicating apparatus. A. B. Diek Stencil duplicating apparatus. A. B. Diek Stock thickeuing and washing Machine, Vacuum. T. E. Warren Stocking welt former. J. F. Roberts Stopping device, Auxiliary. H. Meyer Stove door hinge. C. M. Genthner Strain clamp. A. O. Austiu Strainer, Gasoline. H. D. Waterhouse Strainer, Gasoline. H. D. Waterhouse Strainer, Gasoline. H. D. Waterhouse Strainer, Gasoline. H. D. Waterhouse Switch signal, Open. G. II. Rice Switch signal, Open. G. II. Rice Switch signal, Open. G. II. Rice Switch signal, Open. G. II. Rice Switching mechanism. K. F. Kingwell Table lock, Pedestal extension. Tablets of glass, Manufacturiug writing. Tablets of glass, Manufacturiug writing. Tablets of glass, Manufacturiug writing. Threading device. G. T. Sampson Threshiug and recleaniug machine, Penut. Telephone selective signaling ringer. Threading device. G. T. Sampson Threshiug and recleaniug machine, Penut. Tile and rail fastener. H. H. Wiggins Tile plate. E. H. Bell Tiles aud the like, Device for finishiug the ends of drain. G. E. Golduer Tire, Elastie. C. S. Doty et al. Tire, Elastie. C. S. Doty et al. Tire, Emergency. C. K. Stiner et al. Tire, Emergency. C. S. C. Stiner et al. Tire, Emergency. C. S. C. Stiner et al. Tire, Emergency. C. C. M. Culp

	_
Tire, SteelC. J. Simonson et al. Tire tool, AutomobileG. A. Morris	2
Tire, VehicleA. II. Marks Tobacco pipeB. J. Such	2
Toe calks, Machine for making. W. J. Kent Toy, AerialJ. D. Mills	1
Traction engine	I
Traps, Air inlet for B. E. Slack Trolley C. A. Gouty]
Truck, Car. S. S. Knight]
Thrbine or year Melving flow R. S. S. S. S. S. S. S. S. S. S. S. S. S.	,
Tire tool, Automobile. G. A. Morris Tire, Vehicle. A. II. Marks Tobacco pipe. B. J. Such Toe calks, Machine for making. W. J. Kent Toy, Aerial. J. D. Mills Traction engine. D. O. De Witt Train signal, Electric. E. F. von Dreden Traps, Air inlet for. B. E. Slack Trolley. C. A. Gouty Trolley wheel. C. M. Bronnan Truck, Car. S. S. Knight The thread protector. J. W. West Tnrbine. R. May Twinc or yarn, Making flax. B. S. Snmmers Typesctting machines, Machine for perforating the operating bands of	j
Typewriter carriage stop]
Typewriter carriage stop]
Typewriting machineW.R. Fox	
Typewriting machine W. R. Fox Typewriting machines, Ribbon carrier mach- anism for A. H. Benzee Umbrella and like frame J. Bradbnry]
Umbrella and like frame. J. Bradonry Umbrella handle attaching device J. Konigsberg et al. Unloading apparatus B. Bertke Urn or glass holder . A. C. E. Erichsen Valve W. H. Cnrtin Valve]
Unloading apparatusB. Bertke Urn or glass holderA. C. E. Erichsen]
Valve F. McCarthy	1
Valve arrangement, Reverse]
Valve arrangement, Reverse. G. L. Dzwonkowski Valve, Antomatic gas. L. Scott Valve gear. A. C. Smith et al. Valve gear. J. B. Allfree Valve, Regulating. G. W. Collin Valve, Throttle. C. Roesener Valves, Silencer for intake. W. S. Harley Vchicle assembly stand. H. E. Coffin Vehicle, Motor. R. Fnller Vehicle signal. L. O'Brien	1
Valve gearJ. B. Allfree]
Valve, Throttle]
Vchicle assembly standH. E. Coffin Vehicle Wotor R. Fuller	,
Vehicle signalL. O'Brien Vehicle spring A. R. Graves	
Vehicle signal. L. O'Brien Vehicle spring. A. R. Graves Vehicle wheel. C. Ulmer Vehicle wheel. J. H. Reed	1
Vehicle wheel]
Ventilator]
Vehicle wheel. A. James Vehicle wheel, Road. J. A. C. Wright Ventilator W. F. Gulnerich Vessel and propeller A. H. Wheeler Vessels, Apparatus for raising sunken. J. B. Serres]
Vessels, Determining position of]
Vessels, Determining position of]
Voltage regulation, System of A .A. Tirrill Voting machine]
Voting machine. E. B. Cummings Voting machine. C. H. Ocnmpaugh Wagon box. J. F. O'Brien]
Wagon box. J. F. O'Brien Wagon brake, Antomatic]
Wagon, Dumping E. B. Symons	
Wagon, Dumping E. B. Symons Wall construction, Sea G. W. Lambert Warp stop motions, Insertible detector for G. Freudenthal	
Water by electricity, Apparatus for heating	
Water closetI. C. Muller et al. Water heating apparatusG. II. Gibsou	
Water meter A. S. Drisko Water motor P. T. Coffield	
Water softening compound. O. A. Eberbach Welding burnerJ. B. Burdett	- 1
Welding or cutting torchJ. B. Burdett	
Welding forch constructionJ. B. Burdett Well casing perforatorH. Jam	
Well drill and underreamer Combined	1
Wheel F. F. Eno Wheel guard F. L. Sullivan Wheel structure M. Goldsmith	
Wheel structure, Spring W. P. Airheart	
Wheel structure. Spring. W. P. Airheart Whotstoue. F. J. Scrable Whiffletree attachment. J. Whitworth Wind shield. E. Meier Wood for Composition for preserving	
Wood, &c., Composition for preserving	
Wood, &c., Compositiou for preserving. J. M. Long Wrench. P. T. Barker Wrench. T. J. Kennel Yoke conpling, Neck. W. A. Buchanan Zing Metallyngy of F. L. Clerg	
Yoke conpling, Neck. W. A. Buchanan Zinc, Metallurgy of F. L. Clerc	
Issued September 5, 1911	

Issued September 5, 1911

MECHANICAL PATENTS.

Automobile muffler (2 pats). C. G. Boeck Automobile wheel......J. J. Meesserli Antomobiles and other vehicles, Shock ab-sorber for.....G. C. Martin Cash box alarm...W. E. Dawson, et al. Cathode sheets, Suspension loop for initial.

Centrifugal apparatus...W. J. Gee Centrifugal machine, Coutinuous acting... Centrifugal separator for purifying oils...
F. Thelitz Chains of antiskid devices, Connecting de-Chains of antiskid devices, Connecting device for cross. F. H. Fox Chandelier smoke bell bracket. W. Barlow Chiming mechanism. G. A. Wlost Chimney top mold. N. L. Reid Chuck, Safety. W. L. Procunier Churn. C. S. Waybright Chutc. E. Roenius Cigar bunching machine. N. Du Brul Clearer cover. H. C. Wood Climbing and descending apparatns. W. W. Love Closet cuspidor attachment. W. H. Faust Closure locking meaus (2 pats.) Cloth cleaner, Bolting. D. B. Johnson Cloth piling machine.

M. L. and C. M. Shapera Clothes draining attachment for washboilers. W. F. Padden Clothes line support. M. Horwitz Cock, Iron body. P. Mueller Cock, Self closing. F. F. Lecuyer Coil winder. P. Oswald Combination lock. M. Tamborrini Combing machine. E. C. Rooney Compressed air engine. D. H. Murray Concrete and similar structures, Reinforcing bar for. W. C. Corycll Concrete arch blocks, Mold for making. W. C. Holden

Concrete railway cross tie...A. F. Wilson Concrete tic......C. E. Markham Condenser, Barometric.... Oil burner. H. W. Mason et al.
Oil burner, Coal. H. F. Neslage
Oiling can. C. E. Black
Ore concentrating machine. O. H. King
Ore, Treating emery. F. J. Tone
Ores, Treating, refractory sulfid. Piano W. M. Bauer
Pick J. E. Carter
Picture device attachment, Moving.
C. C. Spinks
Pipc J. M. Johnson
Pipc forcing jack J. E. Hilgers
Plow M. L. Watson
Plow equalizer V. Kohont
Plow, Reversible F. Koch
Pneumatic elevator G. and J. Bernert
Pool table W. Fuld
Power controlling mechanism
W. R. McKeen, Jr.
Presses, Metal bending attachment for L.
H. C. Sprengle
Printers' rollers, Machine for cleaning.
G. Sague Printers' rollers, Machine for cleaning...

G. Sague
Printing and other machines, Sheet lay
mechauism of......C. L. Stern et al.
Printing machine, Selvage....R. Baird
Printing press, Three color, job.

J. E. De Montigny
Propeller....G. and U. Antoni
Protecting box or casing...H. W. Clark
Pulley, Paper...J. W. Taylor
Pulp board making machine...H. A. Moody
Pulp refining engine...E. Jonassen et al.
Pump....F. J. Perkins
Pump......F. J. Wilkins
Pump and valve....T. Thompson
Pump-barrel joint...F. M. Prescott et al.
Purse......W. E. Beck
Rail bond...W. H. Wherry
Rail joint.....O. Melaun Rail bond. W. H. Wherry
Rail joint. O. Mclaun
Rail shoc. A. M. Carlson
Railway crossing, Noiseless. G. Guilbault
Railway gate, Electric.
J. A. Nungesser ct al.
Reamer, Adjustable. H. Walther
Record making device. L. S. Chadwick
Reflector or shade for gas lights, Adjustable.
N. Macbeth
Refuse burning furnace. J. A. Fried
Relay contact. F. B. Corey
Resilient connection. J. K. Putnam
Resistance box. L. A. Dc Mayo
Rigging Release. W. P. Murphy

Sealing and capping bottles....S. C. Bond Seasoning material and making same.... Seasoning material and making same...

C. Ellis
Seed cleaner and grain separator...

J. C. Benson
Seed distributer...
W. H. Beckett
Serving device...
Sewing machine...
J. H. F. Browning
Sewing machine channel guide mechanism,
Shoe
E. E. Winkley
Sewing machine feed mechanism.

A. L. Dawson
Sewing machine feeding mechanism. Sound records, Making metallic duplicate.

F. L. Dyer
Spark arrester and smoke preventing device, Locomotive.

F. H. Cole
Spray composition, Agricultural. C. Ellis
Spring lock, Box and other receptacle.

F. W. Goedeke
Spring motor.

F. W. Goedeke
Spring motor.

F. W. Goedeke
Spring seat clip.

J. L. Higby
Spring seat clip.

J. L. Higby
Spring wheel.

O. H. Hinds
Sprinkler, Liquid distributing. H. Pauling
Sprinkler, Liquid distributing. H. Pauling
Sprinkler, Liquid distributing. H. Pauling
Sprinkler and the color of the for connecting. E. A. Gray
Telephone attachment. G. A. Duryee
Telephone support, Detachable. B. W. Sweet
Telephone system H. P. Clausen
Telephone system (2 pats) A. H. Dyson
Telephone system. E. E. Clement
Telephone system. C. E. E. Clement
Thread cutter, Float. E. H. Marble
Thread machine, Wax O. E. Brown
Time-indicator E. H. Corson
Tire. F. Power
Tire. O. H. Hinds
Tire, Pnenmatic A. Bernier
Tire, Wheel F. Dowd
Tooth crowns, Form for producing artificial E. R. Stevenson
Toy fence F. Carney
Toy kinematograph A. Z. Baker

Display and icing case and can, Combined	F
Display and icing case and can, Combined sheet metal oysterC. Stollberg	F
Display cartonA. M. Boos Display deviceJ. Stranders	E E
Dolf frameE. W. Bell	1
Door checkJ. L. Spoon	H
Door fastening deviceR. A. Moore	H
Door motorJ. F. McElroy	I
Draft gearingA. L. Stanford Drawing implementG. J. Peterson	Ŀ
Display device. J. Stranders Doll frame. E. W. Bell Door check. J. L. Spoon Door fastening device. F. L. Van Duscn Door fastening device. R. A. Moore Door motor. J. F. McElroy Draft gearing. A. L. Stanford Drawing implement. G. J. Peterson Drill gage. R. Daugherty Drinking cup, Sauitary. M. L. Neff	
Duine mechanism Double disk friction	H H
E. Weerts	\mathbf{H}
Drive point	H
Drive hechanism, Double disk friction E. Weerts Drive pointW. H. Fahrney Dust catcher, Combination M. T. Cavanaugh Dyeing acetyl celluloseE. Knoevenagel	13
Dyeing acetyl celluloseE. Knoevenagel	т.
Dyestuff of the anthraquinone series and making same, VatM. Hessenland	H H
Egg beaterC. Opdahl Ejector, condenser, and aid pump or com-	
Ejector, condenser, and aid pump or com-	I:
Electric circuit automatic cut out	1:
pressor. E. S. G. Rees Electric circuit automatic cut out E. S. Sears Electric machine, Dynamo V. A. Fynn	E
Electric machine, DynamoV. A. Fynn Electric resistance furnace	I:
Electric resistance furnace	E
Electrical energy transmission system	Η
	E
Electrical pull socket chain guide	H
Electrode, Arc lamp	1:
Electrodeposition, Appliance for producing	I:
Electrodynamic brake, Alternating current	Î
motor	1:
Electrical energy transmission system C. D. Lanning Electrical pull socket chain guide E. II. Freeman Electrode, Arc lamp	
Electrotyping molds, Treating	I
Elevator controlling mechanism	J
Elevator guide abox H. A. McGrory	К
Engine igniter	I.
Engine starter, ExplosiveA. H. Dalzell	I.
Engine starter, Gasoline	I. L
Electromagnetic device for alternating currents	Ĺ
Engines, Means for treating the exhaust	L
steam of piston steam	
Excavating mechanismH. H. Harris	Į.
Excavating snovel	I. L
Excavating system, Cableway	L
Explosive engine I W Meaker	I.
Eyeglasses. L. B. Becker Farm gate. O. N. Huntosh et al. Faucet, Removahle. II. Stelck	
Farm gateO. N. Huntosh et al.	L
Feeder, CalfJ. Moore	L
Feeder, PoultryA. L. Sweet	Ι.
Fibrous layers. Apparatus for finishing the	L
surface of E. T. Newsome	L
File, Account	L
Faucet, Removanie	\mathbf{L}
Filing device. P. MacGregor Filing system E. A. Dunn Film reel transportation box. II. D. Leith et al. Films, Manufacture of cellulosic. E. Brandenberger	$_{ m L}^{ m L}$
Film reel transportation box	
Films Manufacture of callulasis	L
Filter, Air. E. Brandenberger Filter, Air. H. Winkler Filter element. K. Kiefer Fire cracker and choking material for same	-L
Filter, Air	\mathbf{L}
Fire cracker and choking material for same	
Nordlinger	I.
Fire protectionF. W. Powers	\mathbf{L}
Firearm breech operating mcchanism, An-	N
Fish. PreservingI. I. Kononoff	M
Flagstaff	N.
Flat iron. Self heating Schlesinger	N
	N.
Fluid gageJ. H. Birchard et al.	M
Flying machineW. D. Lindsley	
Forging press	M
Frame attachment, TrialG. A. Griffin	N
Furnace	M
Filter element	*
GageE. A. Mathers	N N
Game deviceJ. L. McClintock	\mathbf{M}
Garment hangerE. W. Goodrich	N N
Garment marking deviceJ. L. Gutman	N
Gas burner	M
Gas meter capacity testing apparatus	N
Cos producer S. M. Quinn	\mathcal{M}
Gas producer	M
Gas meter capacity testing apparatus Gas producer	
Gear operating mechanism, Change	N M
Google Change and G. A. Eddy	
Glass entting off machineN. W. Hartman	$_{ m T}^{ m T}$
Glass furnace	
Governor for rotating sieves and the like.	${ m T}$
Grain and hay loading and transporting machine	T
Grain and hay loading and transporting	$_{ m T}$
Grass-catcherJ. A. Eberle	T
Grass destroying machine Quack	${ m T}$
Grass-catcher. J. A. Eberle Grass catcher. A. E. Mcyer Grass destroying machine, Quack Grinding mill. L. B. McCargar Grinding rollors Machine for	\mathbf{T}
Grinding millL. B. McCargar	${ m T}$
O. A. Schmidt	\mathbf{T}
Gun license certificate holder	\mathbf{T}
Hammer lifting board, DropC. J. Dalley	Т
Hanger	T
Grinding mill	${ m T}$

Harness. E. B. Harpoon N. Kro Harrow J. A. Harrow Drag J. Ha Hat pin guard C. D. H Hat pin point protector A. Hay loader D. Pec Head rest N. W. Headlight adjuster, Automobile E. H. Plank Heat for the development of power, izing F. Sh Heat insulated can L. R. Heater L. Jac Heater F. A. N Heating and ventilating system F. II. Heating and ventilating system C. Kleinsc Hinge Adjusting attachment, Door Hinge fastener B. A. De L Hook	Hyde omanu Wolfe dford Reeves Bodor dersen
Headlight adjuster, AutomobileE. H. Plank Heat for the development of power, izing. F. Sh Heat insulated can L. R. Heater L. Jac Heater F. A. N Heating and ventilating system	ct al. Util- uman Steel obson openz
Heating and ventilating system C. Kleinse. G. J. Grue	Mies hmidt
Hinge adjusting attachment, Door P. M. H Hinge fastenerB. A. De L HookA. A. F	anson ancey Berger
Hinge fastener. B. A. De L. Hook A. A. F. Hook making machine. J. T. I. Hose coupling. J. C. G. Hot water bag heater. T. E. Fogalsang & Hub attaching device. J. N. Rie Humus and making same, Inoculate.	ragan ribben et al.
Humus and making same, Inoculated Hydraulic motor (2 pats)J. R. Hydraulic motors	d Ellis Plank
Hub attaching deviceJ. N. Ric Humus and making same, Inoculate	Huff rbach arelli endall
Internal combustion engine	nolds
production of A. R. Lin Joint and coupling B. W. St Knot tying implement . P. B. Parks	dblad ouffer et al.
Lamp J. Door Lamp Arc J. A. Zienge Lamp chimney holder E. F. Lamp Gas V. A. R	enbos enfuss Drake ettich
Lamp globe holding device	 e. Jr. ecting ranch
Land rollerJ. B Lasting machine (2 pats.)A. LatheG. A. Sp Laundry machine gearingA. E. Re	rooks Bates inner idwin
Laundrying machineA. B. Lead and apparatus therefor, Conti- process of making whiteC. Lead, Making whiteE. E.	Tozer nuous Ellis uston
Life saving deviceE. F: Lifting jack (Reissue)J. H. Burkl Lifting jack ratchet device (Reissue)J. H. Burkl	Miller nolder
Lathe Machine gearing A. E. Re- Laundry machine gearing A. E. Re- Laundrying machine A. B. Lead and apparatus therefor, Conti- process of making white C. Lead Making white E. E. Lid lifter T. W. Con- Life saving device E. F. Lifting jack (Reissue) J. H. Burkl Lifting jack (Reissue) J. H. Burkl Lifting jack (Reissue) J. H. Burkl Lifting jack (Reissue) J. H. Burkl Lifting jack (Reissue) J. H. Burkl Lifting jack (Reissue) J. R. B. Line casting and type composing mach Line casting machine D. S. Kel Line casting machine D. S. Kel Line casting machine J. R. B. Link mesh J. C. Loading apparatus R. C. Con- Looms and similar textile machines, registering apparatus for mechanica registering apparatus for mechanica shail sack holder R. H. R. Mail hook, Auto A. W. Summers Mail sack holder E. D. Co Manure spreader F. E. S! Massaging device for the gums Match E. J. Kr Mausoleum W. R. Cl Measurer, Liquid P. C. Measuring and regulating the concent of dye liquors, Apparatus for W. Bratk Metal creasing machine H. C. H. W. Metal sheet, Protected E. T. New Metal sheets, Method of and apparatu forming hermetically sealed E. T. New Milk, Making dry C. H. Can Mining apparatus, Placer E. A. New Moldi jacket L. Ki Molds, Making G. E. And Molding flask L. Kreut Mop wringer H. F. Motor controller, Electric A. W. Schramm e Transformer, Oil cooled O. I Transformer, Oil cooled O. T Truck side frame, Car V. M. St Truss L. L. D Truck side frame, Car V. M. St Truck side frame, Car V. M. St Truck side frame, Car V. M. St Truck side frame, Car V. M. St Truck side frame, Car V. M. St Truck side frame, Car V. M. St Truck side frame, Car V. M. St Truck side frame, Car V. M. St Truck side frame, Car V. M. St Truck side frame, Car V. M. St Truck side frame, Car V. M. St Truck side frame, Car V. M. St Truck side frame, Car V. M. St Truck side frame, Car V. M. St Truc	ine Cade anedy logers ortner bined.
Loading apparatnsR. C. Loading machineR. T. Mo Loom reedF. C. and M. C. Cor Looms and similar textile machines	niltou Glise Keen nellas Wage
registering apparatus for mechanica S. Mars Lubricating material and manufact the same U. P.	l chick uring White
Lubricator R. H. R. Mail hook, Auto A. W. Summers Mail sack holder E. D. Co Manure spreader F. E. S Massaging device for the gums.	eichel et al. oultas hields
Match	gman eidler ayton olozza ration
Metal creasing machine W. Bratk Metal sheet, ProtectedE. T. New Metal sheets, Method of and apparatu forming hermetically sealed	owski Valsh vsome is for
Milk, Making dry	some apbell wman mball erson zberg
Mop wringer	Pelt ryden Beers
Motor controller, Electric A. S. Motor controlling apparatus, Induct	Gray Sundh ion
Motor controlling device, Electric A. W. Schramm e Traction wheel	t al. hlich ining
uevice	Jahn Kulka mann ndahl Selson
Trolley placerW. D. Trolling hookJ. P. Te Truck side frame, CarV. M. St TrussL. L. 1	Reist elford imma Baker
Tube boring appliance. J. Tube cleaner. A. Frais Tube cutting machine. H. R. Tube mill liner. G. H. K. Tunbler washer. M.	Rowe ssinet Heyl Iirsch Levin
Turbine. C. King Turbine. V. G Turbine, Steam. M. I Type casting machine. O. V. Sigur	et al. Jelpke Rotter dsson

·
Type bodies, Machine for casting and com-
Typewriter for music. F. Groyen Typewriting machine H. H. Simms
Typewriting machineB. P. Fortin et al. Umbrella, FoldingG. Miroczkowski
Unloading device
G. J. Sheppard et al. Valve
Valve actuating device for radiators E. L. Wilson
Valve for refrigerating systems, Expansion C. W. Spellmeyer Valve for steam apparatus Automatic
Vehicle steering wheel, Auto
Vehicle wheel
Vehicle wheel
Vehicle wheelG. Koch et al. Vending machineII. S. Mills
Vending machine, Coin controlledJ. W. Mathes
ViseR. W. aud L. H. Bateman Wagon brakeJ. B. Clanton et al.
Washboard attachmentE. A. Rowe Waste collectorR. II. Cook
Water elevator. J. W. Thompson et al. Water gage. F. J. O'Leary Water bester J. E. C' Curtis
Water heating apparatusR. von Brockdorff
Water purificationE. E. M. Payne Waterfall-power utilization system
Welding machine contact, Electric
Well borer T. Noble Well drilling tool C. E. Wilcox
and other
presses or the like. S. Vessot et al. Whistle. W. H. Burt
Wirk trimming device, Lamp. E. Karvarko Wind shieldJ. II. Sprague Winding and controlling mechanism for
belts and the likeP. J. Dreher Window screenR. B. Swart
Window, SlidingC. Sturmann et al Window, Sliding and pivotingU. Ribant Window, The Residence of the Post o
Wire cable and the like covering machine
Wires and cables, Elevating jack for multiple
Wrench
Type bodies, Machine for casting and composing. E. B. Barber Typewriter for music . F. Groyen Typewriting machine. H. H. Simms Typewriting machine. B. P. Forfin et al. Unbrella, Folding . G. Miroczkowski Unloading device C. G. Sprado Vacuum cleaner . F. Kenney Vacuum cleaning device F. Kenney Vacuum cleaning device G. J. Sheppard et al. Valve . R. Bonnell Valve actuating device for radiators
Issued September 12, 1011.

Issued September 12, 1911.

MECHANICAL PATENTS.

Building block. E. S. Fee Burglar alarm A. Cline Butter and milk mixer C. T. Barton Butter and milk mixer C. T. Barton Button burnishing machine J. Toland Cabinet, Towel H. O. Adams Cableway H. O. Adams Calculating machine, Key set. Camper's outfit box W. L. Spade Can lock, Milk V. J. Andrejkovitz Can marking machine A. L. Duncan Can opener D. R. Franklin Caponizing instrument G. Beuoy et al. Car, Convertible amusement and dining. Car coupling C. H. Packard Car coupling C. S. Bennett Car door, Grain J. W. Wheeler Car door hanger J. T. Grimshaw et al. Car door operating mechanism, Dump Car draft rigging A. P. Prendergast et al. Car operating mechanism, Dump Car operating mechanism, Dump Car, Rail motor L. F. Goodspeed Car, Street C. H. Sholes Carbureter A. E. Gunz Carbureter A. E. Gunz Carbureter A. E. Gunz Carbureter A. E. Gunz Carbureter A. E. Gunz Carbureter A. E. Gunz Card punching machine, Jacquard Carcass dehairing and polishing machine, Casting, Metal H. L. Whittemore Casting, Metal H. L. Whittemore Chain links for bucket dredgers, elevators, and the like P. M. Dekker Chain, Watch J. C. Chalining Chain support W. R. Hill Churk A. Peterson et al. Churn and operating mechanism Chain inks for bucket dredgers, elevators, and the like P. M. Dekker Chain, Watch J. Conelly Chair attachment C. W. Emmons Chauneling machine R. Schmitt Churn and operating mechanism Churn and operating mechanism Churn and operating mechanism Cigar rolling machine R. Schmitt Churcuit breaker W. J. Lietzenmayer Circuit controller R. Schmitt Cigarctte machine tobacco feeding device. M. C. Grahl Churn and operating mechanism Circuit interrupter F. W. Harris Clamsing and pitching machine Clack, Watchman's H. Weinter Clock, Watchman's H. Weinter Clock, Watchman's H. Weinter
Burglar alarmA. Cline BurnerA. Burton
Butter and milk mixerC. T. Barton
Cabinet, Towel
Cableway
Camper's outfit box W. J. Spade
Can
Can marking machine L. Andrejkovitz Can marking machine L. Duncan
Can opener
Car, Convertible amusement and dining
Car couplingJ. Kelso
Car coupling
Car door hangerJ. T. Grimshaw et al.
Car draft riggingA. P. Prendergast et al. Car journal box and lid. Railway
Car operating machanism Liver
G. T. S. Ingoldsby
Car. Rail motorL. F. Goodspeed Car, StreetC. II. Sholes
CarbureterA. E. Gunz
Carbureter nozzleT. H. Parker
careass denarring and pointing machine.
Card punching machine, Jacquard J. G. Soderberg
Carline
Casting steel ingots
Chaff separatorC. F. Hupner
Chain links for bucket dredgers, elevators, and the like
Chain, WatchJ. J. Conelly
Chauneling machineH. W. Winter
Chin supportE. B. Rodman
Chuck
Gigen welling medianism. E. A. Biggs
Cigar rounng machine
Circuit breakerW. J. Lietzenmayer
Circuit controllerJ. P. Coleman
Clamp for brazing or similar work
Cleansing and pitching machine
Clock Watchman's
Cloth cutting machine
Clutch deviceJ. P. Coleman
Coal loading apparatusII. J. Gilmore Coal separator and graderJ. L. Cox
Cock or valve for vacuum pipe systems,
Coffee making apparatnsM. Bargallo
Coffee pot, AutomaticF. V. Brooks Collapsible boxJ. E. Potter
Comb safety device
Composition of matterW. H. Murray
tus for disposal of waste rock from
Concrete construction, Stccl skeleton
Concrete Lining shafts with E. Lardy
Concrete mixerII. M. Capron
Concrete mixer
Corset claspM. B. Gardner Cotton gin ginning member. E. R. Bullock
Cotton gin roller (2 pats.)W. H. Harriss
balingJ. W. Kirchhoff
Counter
ream separator Centrifugal A Debna
Cream separator detachable distributer
Cross tie, Combination steel and concrete—
Crushing millA. Knappenberger
Crutch attachmentK. D. Harding
CultivatorJ. M. Wright
Cultivator fender
Circuit controller J. P. Coleman Circuit interrupter F. W. Harris Clamp for brazing or similar work
Curtain poleE. Harmel
Cushioniug device, Pneumatic
Cushioning means, PneumaticI. Cowles
Cutting tool
J. II. Rapp
Tycle saddle support, Motor. O. L. Adams
DamR. C. Beardsley
Dental toolF. H. Skinner
Developing taukM. L. Victorius
Distance and distributing device
Display mechanism, WindowD. Fuller Display mount
Display rack
Ditching machineB. Bowman
Door hanger
Cycle exhaust whistles, Means for operating Cycle exhaust whistles, Means for operating Cycle saddle bag. F. J. Dyson et al. Cycle saddle support, Motor. O. L. Adams Cylinder head H. W. Jacobs Dam R. C. Beardsley Dental tool F. H. Skinner Cerrick, Hand J. L. Taylor Developing tauk M. L. Victorius Disiufcctant distributing device T. R. Dunkley Display mechanism, Window D. F. Fuller Display mount W. M. Foote Display rack C. A. Morley Display rack C. A. Morley Display rack C. A. Morley Display machine B. Bowman Ditching machine B. Bowman Ditching machine D. M. Hartsough Door hanger M. Cossey Coor hanger G. H. Knight Door, Sheet metal N. P. Sjobring Oraft equalizer I. G. Tedder Drawing board N. W. Salisbury Drill swage R. Jamieson
Oraft equalizerI. G. Tedder
Drawing boardN. W. Salisbury
Drill swage

Drilling machine	(
	I
Dye for wool, Monoazo]
Dyestuff and making same, Red mordant]
Eaves trough hanger, Adjustable	
Edger R. J. Tower Egg and the like box A. E. Stein Electric alarm P. A. Brown Electric ares, Process and apparatus for producing long stable O. Schonherr et al.]
Electric coutact under carpets and the like for alarm signals and other purposes	
Electric cut-out. G. A. Jordan Electric furnace. A. Helfenstein Electric snaw switch R. I. Barber et al.	
Electric coutact under carpets and the fixe for alarm signals and other purposes Electric cut-out	
Electrical currents, Relaying. E. E. Clement Electrode for electric furnaces.	
Electrical currents, Relaying. E. E. Clement Electrode for electric furnaces. W. T. Gibbs et al. Electrolytic apparatus. Electrolytic cell. W. B. Thorpe Electrolyzing nickel sulfate solutions. II. II. Dow et al.]
Elevator automatic safety catch	
Elevator automatic safety catch	
Engine	
Engine plant, AirM. Thibault et al. Engine plowing with two engines, Continu-	
ous	
ticles, Apparatns forK. Schwahn Excavator I. Pascal Explosive manufacturing machine, High	
ticles, Apparatns for . R. Schwann Excavator . I. Pascal Explosive manufacturing machine, High Ellis Extractor cover, Safety . W. Bartholomew Fall rope carrier . J. T. Horton et al. Fare box Legault Fastening inserting machine . F. H. Perry Faucet Gruschow Eved nacker	
Fare box B. Legault Fastening inserting machine. F. II. Perry Faucet	
Faucet. F. Gruschow Feed packer R. Maxwell Feed system, Multiple A. T. Marshall Fence, Wire T. E. Andrews, Jr. Ferry mooring device G. W. Harney Fertilizing scale poisou W. R. Kleckner	
Ferry mooring deviceG. W. Harney Fertilizing scale poisouW. R. Kleckner File for desks and safes, Documents	
File for desks and safes, Documents	
Fire anarm, Electric	
Fire escape	
Flour or meal, Producing C. Herendeen Fluid gage M. Martin Fluid pressure gage J. Shebol et al.	
Fluid pressure gage. J. Shebol et al. Folding box and crate. J. J. Taylor. 2d. Force feed lubricator. H. W. Hancock Forceps, Bone. A. De Vilbiss Forceps, Cutting. S. J. Brandeis	
Forceps, Cutting S. J. Brandeis Fork for eating corn on the cob	
Foot ProtectorJ. C. Watson Foundations, Method of and apparatus for	
Funigator	
Carlinelli fitter A. Kunkler	
Gas cut off, Automatic Marple Gas distributing device	
Gas lighter, AutomobileC. Elliott Gases resulting from reduction operations	
tric furnace for carrying out same, Util-	
Gear, Fishing B. Ford Gearing Ford Gearing	
Gearing A. S. Krotz Gearing W. Lippitz Gearing II. Baerbalck et al.	
Generator carbid holder, Acetylene gas L. R. Iruz	
Glass case goods, Manufacturing (2 pats.). J. I. Arbogast Glass, Manufacture and production of silica	
silica	
Glass, Severing. J. I. Arbogast Glove, Base ball. S. Cline Governor, Engine. R. H. Pascal	
Grave linings, Device for supporting	
Grease cup. F. L. Treese Grease cup, Antomatic. J. F. Lewis Grippers. P. H. Doherty	

Gun breech block mechanismE. Muller Gun, RecoilM. Hermsdorf Gun, Shonlder pieceP. Haacker Guu with an independent sighting line	r Pi f Pi r Pl
Guu with an independent sighting line Gymuasium apparatus. J. McDermot Hair ironing comb. E. H. Taylor Hammer, Pneumatic. R. T. Scot Hammock swinging means. A. C. Schaefer Handle clamp. C. T. Wootter Harness attachment. J. S. Ston Harrow disk sharpener. E. E. Combr.	t Pl r Pl t Pl r Pl n Pr
Hasp lock. F. Brigg Hasp lock. Y. Q. Caldwel Hat holder E. J. Moriu	s Pe l Pe n Pe
Hay and other material, Apparatus for un loading. N. C. Mille Hay rack. S. E. Shafe Hay rack. II. Martiu Heel gnard. II. W. Reidne Heels, Machine for inserting nails in	r Pr
Hay and other material, Apparatus for un loading. N. C. Mille Hay rack. S. E. Shafe Hay rack. IS. Martin Heel gnard. H. W. Reidne Heels, Machine for inserting nails in J. Gouldbourn Helical cutter. W. F. Zimmermann Hides, Bating. O. Rohn Hides, Treating. D. Redda: Hinge, Silo door. W. D. Plu Hob cutter. W. F. Zimmermann Hog scraper, Automaiteally feeding and discharging. J. W. Kohlhep Hook. L. A. Lan Horse detacher. A. W. Too Horse detacher. R. T. Conne Horseshoe. E. Marthew Horseshoe antislipping device. J. Bindot Humidifying apparatus. A. J. Dronsfield	n P n P n P e P
Hog scraper, Automatically teeding and discharging. J. W. Kohlhep Hook. L. A. Lan Horse detacher A. W. Too Horse detacher R. T. Conne Horseshoe E. Matthew	d P P P e P ol P r R
Hydrochlorid of ortho dioxy-phenyl-ethano	e R l- R
methylamin in a crystallized form F. Flaeche Hydrogen peroxid. StableO. Licbknech Hygrometric indicatorE. W. Comfor Implement, ConvertibleW. Thompso Induction motorA. M. Gra Induction motorJ. L. Johnso Insect destroyerJ. T. Loomi Internal combustion engineJ. Shay InterrupterR. H. Wapple Ironing boardR. J. Christi Jar closure fastenerW. A. Bostwice Keg washing and sprinkling machine, Auto	r R t R n R y R n R
Internal combustion engine. J. Shave Interrupter. R. H. Wapple Ironing board. R. J. Christi Jar closure fastener. W. A. Bostwick Keg washing and sprinkling machine, Automatic E. Stroft	w R er R ie R k R o- R
matic F. Strol Knitting machine. F. B. Wildma Knitting machine, Circular W. T. Barrat Lamp D. A. William Lamp buruer F. D. Spea Lasting mechanism M. Broc Latch strike plate. Spring H. G. Voigh	17
Latch strike plate. Spring. II. G. Voigh Leather working machine Staniszewsk Lid fastening, MetalC. T. Wootte Lifting jackW. B. Foste Lightning rod braceG. A. and L. E. Mille Liquid separator, Centrifugal J. V. M. Risberg et a LockY. Q. Caldwe Locomotive furnace deviceJ. Bolgian LoomG. S. Prude Loom stopping deviceD. Schat LubricatorS. D. Jone	i Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser
Lock. Y. Q. Caldwe Locomotive furnace device. J. Bolgian Loom. G. S. Prude Loom stopping device. D. Schat Lubricator. S. D. Jone Lubricator. C. W. Manze	ll S n S n z S el S el S
Loom stopping device	is Sin Sin Sin Sin Sin Sin Sin Sin Sin Sin
Match splint carrierF. C. Dininn Medicine, DigestiveR. Ehrman Merry-go-roundT. W. Ridpat Metal bending or forming dieG. A. Ohl, J. Metallic tie and rail fastenerW. J. Burt	iy S in S ih S r. S ke S
Mica sheets, Apparatus for preparing M. Meirowsk Miter box	ty Sh S m S id
Mop wringer. F. T. Murra Motor controlling apparatus. S. H. Keefe Motor starting daying Internal compaction	ıy S er
Mower buncher attachment. J. A. Olive Musical wind instrument. H. B. Ja Nozzle. S. L. Bern Nut lock. W. D. Smit Oar. T. H. Sho Oil burner. W. F. Ha Oil can. A. I. Johnse Oil gas burner. J. P. Hollenbee	ol-
Oleum, Making. I. J. Co. Ores. Gravity liquid separation of certa iron. F. I. Du Poi Ores in a converter, Treatment of sulfurete copper zinc. D. Koro Oven, Bake. W. Clan Packing and reshipping box.	ox Sin Sold Sold Sold Sold Sold Sold Sold Sold
Wants et a	ш. г
Packing, Piston rod	
Photographic light screen or filter	1
Piano player, Pneumtaic J. Courvil Piano player, Pneumatic W. G. MacArthe Pickling	nn 7 rd 7 on 7 ds 7
Pipe joint, Telescopic	1c

	_
Piston head	
Planer, BlockL. G. Freeman	
Planers and the like, Driving and reversing mechanism forF. Snow	
Piston head	
Plow W. A. Harris	
Pneumatic wheel	
Pole, PushA. Markin Post and pole and base therefor	
Poultry duster Antomatic, F. H. Goodspeed	
Power transferring deviceII. C. Warren	
Power transmitting mechanism. T. Bickford	
Press feeding mechanismN. Sebba Pressing and creasing ironT. P. Moore	
Pressure fluid and power supplying mechanism	
Pressure gage. Differential W. H. Bristol	
production of	
Projectile	
Propeller, ScrewO. Habig	
Pump, Air. I. Pasley	
Pump pressure governorW. V. Turner	
Pump, RotaryS. J. Webb Punch gage, CenterA. D. Goughnour	
RadiatorJ. M. Fedders	
Rail fastenerJ. H. Killinger	
Rail jointJ. W. Scott	
Rail plate and clampW. A. Burger et al. Rails. Tie rod for trackS. Bzsan	
Railway frog	
Pailway tie W. P. Haugh	
Radiator. J. M. Fedders Rail anticrceper . S. E. Nelson Rail fastener . J. H. Killinger Rail fastener . W. Vandercook, Jr. Rail joint . J. W. Scott Rail plate and clamp . W. A. Burger et al. Rails, Tie rod for track . S. Ezsan Railway frog . C. C. Chambers Railway signaling system . T. H. Pateuall et al. Railway tie . W. B. Houck Razor stropping machine . S. Willett Receptacle, Collapsible . D. Heyman Receptacle-opening device . J. H. Hotson Rifte cleaner . D. L. Humphreys Riveting and calking machine . C. J. Smith Roller mill (2 pats) . W. A. Dunn Rope clip . J. R. Wood Rotary explosion engine I. B. Humphreys Rubber or gutta percha, Purifying . W. Elsner et al. Sash fastener, Window . E. R. Welker Saw gage . J. J. Fippen Scale, Weighing . R. C. Lewis Screen . M. E. Priest Scaling machine, Tape . W. Chichester et al. Seats, Drop back rest for . H. Conboy Sewing machine . E. Erickson	
Receptacie, Conapsible,D. Heyman Receptacle-opening deviceJ. II. Hotson	
Rifle cleanerD. L. Humphreys Riveting and calking machine. C. J. Smith	
Roller mill (2 pats)	
Rotary explosion engine. I. B. Humphreys	;
Rubber or gutta percha, Puritying W. Elsner et al.	
Sash fastener, WindowE. R. Welker Saw gageJ. J. Pippen	
Scale, Weighing	,
Sealing machine, Tape W. Chichester et al.	
Sewing machine	ı
Sewing machine, Inseam shoe Eppler	•
Shade and curtain holderE. Hayward Shade supporterD. M. Hartsough	l t
Shaft casingE. E. Fawcett	
Shafts in loose and watery strata, Sinking.	,
Sewing machine. B. F. Hayo Sewing machine. Inseam shoe. A. Eppler Shade and curtain holder. E. Hayward Shade supporter. D. M. Hartsough Shaft casing. E. E. Fawcett Shaft releaser. E. L. Black Shafts in loose and watery strata, Sinking. E. Lardy Sheet metal in cutting means for gaging. W. S. Reynolds Shelving, Knockdown. H. A. McFarland Shifting seat. R. L. Notman Shifping box, Collapsible. H. S. Wright Shutter bower. R. G. Winter Sifter, Flour. A. J. Jenevein Signal apparatus. A. J. Kercher Signal electrical apparatus, Optis. C. J. Herbeck	
Shelving, KnockdownH. A. McFarland	3
Shifting seatR. L. Notman Shipping box, CollapsibleH. S. Wright	t t
Shutter bowerR. G. Winter Sifter, FlourA. J. Jenevein	ì
Signal apparatusA. J. Kercher	•
Signal electrical apparatus, Optis C. J. Herbeck Signaling. D. Robertson Signaling apparatus, Electric. L. P. Locke Signaling system, Selective. E. R. Gill Skirt gage. L. J. Davis Skylight lifter. W. R. O'Rourke Slag, Process and apparatus for putfling blast furnaces. H. Ottmann Sled. F. Hornquist Small arm, Automatic repeating, sporting and other. G. Fritsch et al Smoothing irou with removable handle. H. Briande Soda fountain counters, Metallic frame for G. W. and H. A. Wise	Ĭ.
Signaling apparatus, Electric. L. P. Locke	2
Skirt gageL. J. Davis	s
Skylight lifter) Y
blast furnacesII. Ottmann SledF. Hornquist	1 t
Small arm, Automatic repeating, sporting and other	
Smoothing irou with removable handle	ŕ
Soda fountain counters. Metallic frame for	
Sound receiving deviceS. M. Davisor	1
Soda fountain counters, Metallic frame for	-
cy jarring device, Combined	e e
Speed regulator releasing mechanism	е
Speed regulator, StokerP. L. Crowe et al Spinning machine thread breaking device	
Chairm daying Properties I Couples et al	1
Spring device, PheumaticI. Cowies et al Spring wheelJ. E. Stannard	i
Stacker, HayJ. H. Anderson Stage scenery elevating and lowering de	J
vice	n S
Steam boiler,J. T. Nicolson Steam generator Soda	1
Stepoworking tools Lust preventer for	a
Stove door W. M. Holden et al	i.
Stowing mechanismJ. W. Crnikshanl	k
Strap tightener P. D. Christman	ล์ ก
Subway constructionE. Diebitsel Suit cases, trunks, and the like, Followe	r
for C. F. Finl Swivel P. J. A. Schnoo	k r
Speed regulator, Stoker. P. L. Crowe et al Spinning machine thread breaking device F. Q. Hartmann Spring device, Pneumatic. I. Cowles et al Spring wheel. J. E. Stannare Stacker, Hay. J. H. Anderson Stage scenery elevating and lowering de vice. C. L. Hager Stamp handling device. R. W. Jone Steam boiler. J. T. Nicolson Steam generator, Soda R. d'Equevilley-Montjustin Stoneworking tools, Dust preventer for. W. M. Holden et al Stove door. A. G. Sherman Stowing mechanism. J. W. Crnikshanl Strainer. E. A. Britzin Strap tightener. P. D. Christman Subway construction. E. Diebitsel Suit cases, trunks, and the like, Followe for. C. F. Finl Swivel. P. J. A. Schnoo Telegraphic translator A. O. Urban Telegraphy, Wave detector for wireless (pats.) W. Schoemilch et al	n :;
pats.)W. Schoemilch et al Telephone attachmentR. E. Southwiel	l.
Telephone receiver sound conducting at	1
Telephone attachmentR. E. Southwich Telephone receiver sound conducting at tachmentC. H. Gatchel Telephone systemC. S. Winston Telephone system, Party line	á
and a second control of the control	T
Thermometer, OvenA. E. Whittie Thread, SpongeR. A. Dunning Tickets and the like, Apparatus for sale of	g g
Tickets and the like, Apparatus for sale of	

Tide-water motor. J. Hall Tie remover J. C. Burns Timber strengthening rod. F. B. Pease Time controlled mechanism. A Carpenter Tire. E. A. Sundvall Tire. r. A. F. Krame Tire-applying tool. T. W. Burt Tire for motor vehicles, Rubberless. G. W. Killin Tire patching device (2 pats.) G. J. Martel Tire protector. J. I. Hall Tire repair patch, Pneumatic. G. J. Martel Tire, Reinforced puncture proof. J. Anthony
Tire patching device (2 pats.). G. J. Martel Tire protector J. I. Hall Tire repair patch, Pneumatic. G. J. Martel Tire, Reinforced puncture proof
Tire, Vehicle
Toy drum I. Schlesinger Try drum I. Schlesinger Track for litter carriers M. C. Stevenson Track, Overhead H. L. Ferris Traction device G. E. Baker Tractor P. E. Holt Trap S. M. McDaniel Trap S. M. McDaniel Trap Trolley catcher F. W. Geoghegan Trolley wheel J. Speath et al. Trousers creaser and stretcher W. Dixon Trowel Try N. Wilson Trowel Trupine Trolley C. A. Lincoln Turbiue T. J. Loftus Turbine, Elastic fluid (2 pats.) C. B. Rearick Turbine, Steam G. Belluzzo Turbine wind engive Telescope
Trap. S. M. McDaniel Trap
Trowel
Turbine, Steam
Turbine, Steam. G. Belluzzo Turbine wind engiue, Telescope
Typewriting machine. II. H. Steele Typewriting machine. E. E. Barney Typewriting machine. S. Kanschine
Valve. F. Cerbo Valve. J. A. Gorton Valve. T. E. Sange
Valve and operating mechanism therefor, ReversingJ. C. Cromwell Valve for gas lampsT. J. Litle, Jr. Valve, InjectorW. Vial Valve locking deviceF. C. Shepard Valve operating and indicating mechanism. L. F. Bellingrath Valve operating mechanism. J. Allingham Valve raiser, Oil wellH. Sark Valve rclease mechanism for steam engines. A. Van Brunt
Valve locking deviceF. C. Shepard Valve operating and indicating mechanism. L. F. Bellingrath
Valve operating mechanism. J. Allingham Valve raiser, Oil well
Vapors from air, &c., Apparatus for recovering solvent
Vehicle braking systemW. Cooper Vehicle compensating mechanism, Motor J. F. Rogers
Vehicle driving mechanism. F. G. Gauntt Vehicle jack. J. R. Tyson Vehicle, Motor. R. Huff Vehicle sleigh attachment H. L. Jones
Vehicle spring
Vending machineB. M. Lincoln Vending machineW. D. C. Wright Vending machineC. S. Hardy Vessel's cargo Apparatus for indicating the
weight of a D. Mackay Washing machine F. Pollmann Washing machine H. L. Freeman Water gage J. A. Cooper et al.
Water heater, Electric
Wax from plants, Apparatus for separating
Well digging apparatusC. B. Martin Well drilling rigs. Crown block for
Valve operating mechanism. J. Allingham Valve raiser, Oil well. H. Sark Valve release mechanism for steam engines. A. Van Brunt Vapors from air, &c., Apparatus for recovering solvent. A. Collard Vehicle brake, Automatic. J. D. Ellison Vehicle braking system. W. Cooper Vehicle compensating mechanism, Motor. J. F. Rogers Vehicle driving mechanism. F. G. Gauntt Vehicle jack. J. R. Tyson Vehicle, Motor. R. Huff Vehicle sleigh attachment. H. L. Jones Vehicle spring. W. E. Eastman Vehicle spring. W. E. Eastman Vehicle tractor. J. D. R. Lamson Vehicles, Automatically controlling headlights for. B. M. Lincoln Vending machine. W. D. C. Wright Vending machine. W. D. C. Wright Vending machine. W. D. C. Wright Vending machine. W. D. C. Wright Vending machine. W. D. C. Wright Vending machine. F. Pohlmann Washing machine. F. Pohlmann Washing machine. F. Pohlmann Water gage. J. A. Cooper et al. Water tube boiler. F. R. Sartor Wave motor. A. W. Dowe Wax from plants, Apparatus for separating. C. Hill Weapon and tool. Combined. Well digging apparatus. C. B. Martin Well drilling rigs. Crown block for. A. C. Zierath Welt shank cutter. A. B. Exler Welt splitting device. F. H. Hawkins Wheel. R. Riehl Wheels, Machine for refacing band saw. H. D. Fields Winding machine, Tube. C. F. Welsh Winding machine, Cross. J. Schweiter Winding machine, Tube. C. F. Welsh Window adjuster, Casement. I. D. Stine Window screen, Roller. J. Buackburn Window structure. J. P. Murnane Wire stretcher. J. S. Campbell Wrench. J. L. Oliver Wrench. F. W. Fritchey X-ray system. E. Blum
Winding machine, CrossJ. Schweiter Winding machine, TubeC. F. Welsh Window adjuster CasementJ. D. Stine
Window screen, Roller. J. Buackburn Window structure. J. P. Murnane Wire stretcher. J. S. Campbell Wrench. J. L. Oliver
Wrench F. W. Fritchey X-ray system E. Blum

Issued September 19, 1911.

MECHANICAL PATENTS.

A. B. Duff
Animonia recovering apparatus A. B. Duff Ammonia, Making E. Collett et al. Animal trap E. H. Kettelforder Animal trap C. H. Falls Annealing box J. P. Allen Automobile H. Mayer
Automobile hoist and turn table L. S. Hackey Automobile power motorC. A. Woods
Automobile sign holder (Reissue)
Bail ear attaching machine
Animal trap. E. H. Kettelforder Animal trap. C. H. Falls Annealing box J. P. Allen Automobile H. Mayer Automobile hoist and turn table L. S. Hackey Automobile power motor C. A. Woods Automobile sign holder (Reissue) F. Coryell Bag fastening handle E. J. Kuhn Bail ear attaching machine C. R. Benedict Bail ears, &c., to receptacles, Meaus for securing L. O. Brown Bait holder C. E. Henning Balancing machine L. O. Brown Bair holder C. E. Henning Balancing tank L. F. Ragot Barber's comb J. L. Woods Barber's reversible hair cloth M. Moritz Barrel cleaning machine J. B. Pecht Barrel sizing and crimp-rolling machine L. Bauroth Barrel sizing and crimp-rolling machine L. Bauroth Barth closet L. Bauroth Barth closet L. Bauroth
Barrel cleaning machineJ. B. Pecht Barrel making machineD. Brown et al.
Batrel sizing and crimp-rotting machine L. Bauroth Bath closetR. L. Leo
Barrel making machine. L. O. Brown et al. Barrel sizing and crimp-rolling machine
Bearing, Roller (2 pats.)J. Newmann Bell ringerF. Simons Binder Losse leaf G. W. Thomas
Blackleading machine. L. F. Eaton Blade holder. P. R. Buchholz Boat sculling apparatus. J. Sax Bolt lock. M. Jacobs
Book trimming machineT. C. Welch Book send shees Making I. F. Hackson
Boots and shoes, Tread forW. B. Acker Bottle neck forming toolW. S. Dorman Bottle Non-refillable J. Kretzer
Bowl, Sugar. J. Matas Box case. R. W. Thayer Brake C. L. Lincoln
Breastpins, &c., Safety catch for
Breastpins, &c., Safety catch for
Brush G. R. Penn Brush boring machine P. Meyer Bucket, Coal J. C. Burgess
Bucket, Turbine. E. H. Farquhar Buggy body. J. T. Barnett Buggy wrench. II. J. Winckler
Building construction. H. I. Jeffers Bundle fastener. H. L. Swanson Bung spout, Twin. C. D. Bowyer et al.
Butcher
Calendar
Cameras, Solution drain for plate holders
Can testing machineJ. E. McCullough Car and the like, MineW. B. Lloyd Car couplingH. Donnelly Car couplings, Auxiliary connection for
Car door
Cars, Street indicator for railway
Carriages, Sleighing attachment for J. I'. McCready Cash register
Casket, BurialN. S. Peterman Catamenial bandageO. J. Miller-Jones Cement or concrete structures or articles, MakingJ. D. Freund
Chair attachment, Infant's highO. Hamry Chuck, MagneticB. M. W. Hanson
Chair attachment, Infant's highO. Hamry Chuck, MagneticB. M. W. Hanson ChurnN. J. Johnson et al. Cleaning apparatusT. J. and D. M. Winans
Burner
Clothes drying frameJ. W. Horner Clothes pinJ. M. Williams Coal hole cover locking device
Clothes drying frameJ. W. Horner Clothes pinJ. M. Williams Coal hole cover locking device
Clothes drying frameJ. W. Horner Clothes pinJ. M. Williams Coal hole cover locking device
Clothes drying frameJ. W. Horner Clothes pinJ. M. Williams Coal hole cover locking device
Clothes drying frameJ. W. Horner Clothes pinJ. M. Williams Coal hole cover locking device
Clothes drying frame. J. W. Horner Clothes pin. J. M. Williams Coal hole cover locking device. J. Braun Coking furnace and conveyer therefor. L. L. Summers Combustion, Perfecting. L. L. Summers Combustion perfecting furnace. W. J. Paul et al. Combustion perfecting furnace. W. J. Paul et al. Commutator, Rotating. A. D. Williamson Concrete sewers and tunnels, Mold for building. C. H. Witthoefft Concrete wall molding device. W. A. Fray et al. Control, Multiple. H. W. Leonard Control system, Distance. L. R. Krumm Control system, Multiple. H. W. Leonard Cooking utensil F. P. Brust Cooking vessel E. D. Schmitt Coping block. E. M. Campfield
Clothes drying frame. J. W. Horner Clothes pin. J. M. Williams Coal hole cover locking device. J. Braun Coking furnace and conveyer therefor. L. L. Summers Combustion, Perfecting. L. L. Summers Combustion perfecting furnace. W. J. Paul et al. Combustion perfecting furnace. W. J. Paul et al. Commutator, Rotating. A. D. Williamson Concrete sewers and tunnels, Mold for building. C. H. Witthoefft Concrete wall molding device. W. A. Fray et al. Control, Multiple. H. W. Leonard Control system, Distance. L. R. Krumm Control system, Multiple. H. W. Leonard Cooking utensil F. P. Brust Cooking vessel E. D. Schmitt Coping block. E. M. Campfield
Clothes drying frame. J. W. Horner Clothes pin. J. M. Williams Coal hole cover locking device. J. Braun Coking furnace and conveyer therefor. L. L. Summers Combustion, Perfecting. L. L. Summers Combustion perfecting furnace. W. J. Paul et al. Combustion perfecting furnace. W. J. Paul et al. Commutator, Rotating. A. D. Williamson Concrete sewers and tunnels, Mold for building. C. H. Witthoefft Concrete wall molding device. W. A. Fray et al. Control, Multiple. H. W. Leonard Control system, Distance. L. R. Krumm Control system, Multiple. H. W. Leonard Cooking utensil F. P. Brust Cooking vessel E. D. Schmitt Coping block. E. M. Campfield
Clothes drying frameJ. W. Horner Clothes pinJ. M. Williams Coal hole cover locking device

Culvert
Damper, AutomaticJ. E. Dalton Dictaphone recorder and reproducer
Dining table, Automatic or self-opening extension. E. Napoli
Dipper toothJ. G. Skelton Dispensing apparatusL. G. Green Display case, Sanitary banana
Display rack
Door check (2 pats.)J. C. Regan Door check and closerJ. C. Regan
Door jamb setter
Door signal L. L. Bories Dough dividing machine F. Streich Dough mizer L. Blass Drafting instrument C. H. Little Drafting machine (2 pats) C. II. Little Drafting machine (2 pats) C. II. Little Drills or planters, Attachment for corn A. J. Winebrenner Drip pan signal indicating device C. C. Mohler Drying and polishing F. A. Tolhurst Dusting-roll M. II. Piper Dynamo L. E. Underwood Dynamos. Brush holder for C. C. Booth Electric energy, Method and means for control of II. W. Leonard Electric machinery, Regulation of dynamo. Electric regulator S. Y. Culley Electric switch G. B. Thomas Electrical controlling means II. W. Leonard Electrical distribution system (2 pats) Electrical distribution system E. Van Wagenen Electrolytic apparatus E. Van Wagenen Electrolytic protection A. B. Herrick Electrotherapeutic device J. B. Wantz Elevator guide shoe F. V. Winters Elevators, Device for automatically charging the delivery buckets of W. Reubold Embroidering machines, Shuttle mechanism for M. Schoenfeld Emulsifier L. C. Smoot et al.
Drills or planters, Attachment for corn Drills or planters, Attachment for corn Drill pan signal indicating dayies
Drying and polishing E A Tolburst
Dusting-roll
Egg beater
Electric machinery, Regulation of dynamo. H. Guttinger Electric regulator S. Y. Culley
Electric switchG. B. Thomas Electrical controlling means
Electrical distribution system (2 pats) A. S. Hubbard Electrical distribution system.
Electrolytic apparatus E. Van Wagenen
Electrolytic protectionA. B. Herrick Electrotherapeutic deviceJ. B. Wantz Elevator guide sheeF. V. Winters
Elevators, Device for automatically charging the delivery buckets of
Embroidering machines, Shuttle mechanism for M. Schoenfeld Emulsifier F. C. Wood
Engine starting device, GasC. F. Jenkins
Engine starting means, Internal combustion G. Honold Engines, Ignition system for multicylinder internal combustionR. L. Bond Evaporating apparatusP. Kestner Excavating machineD. F. Hogan Eyeglass cleanerC. Lehmann Eyeglass mountingG. A. Squier Eyeglass nose guardL. F. Adt Fabrics, Metallic stock shell for V. F. Gammeter Fastening deviceW. E. Sharp Fastening deviceW. E. Hoffman Peed water heaterJ. M. Collins Feeder and exerciser, PoultryT. Lawry Fence post constructiouT. W. Schaefer Fertilizer, insecticide and fungicide
Evaporating apparatusP. Kestner Excavating machineD. F. Hogan Eyeglass cleanerC. Lehmann
Eyeglass mountingG. A. Squier Eyeglass nose guardL. F. Adt Fabrics, Metallic stock shell for
Fastening device. W. E. Sharp Fasteniug device. W. E. Hoffman
Feed water heaterJ. M. Collins Feeder and exerciser, PoultryT. Lawry Fence post braceG. Schneider
Fence post constructionT. W. Schaefer Fertilizer, insecticide and fungicide W. F. K. Stock
Treatment of
pet snows) movable, Device for rendering stage
Fire extinguishing apparatus D. W. Adams Fire kindler R. H. Umbenhaur Flanging demp
Flask bar. J. Tuohy Flue cleaner. W. V. Taber Flying machine J. C. Vincenpen
Flying machine (2 pats)M. G. Adams Flying machineJ. J. Day Flying machineJ. W. Dolson
Flying machines, Automatic lateral balance controlling device forR. M. Thompson Fodder machine
FolderJ. P. Weis et al. Folding boxJ. G. Reber Forms Reinforcement for garment
E. T. Palmenberg et al. Frequency meterA. F. Poole Fruit pickerP. Nelson
Furnace setting, Boiler. H. H. Tracy et al. Fuse, ElectricJ. A. Tornquist Fuse plug, VentilatedF. C. Curtis
Game apparatusJ. T. Fenton GarmentM. Schorr Gas flasher apparatusJ. Spring
Gas producer
Gate operating deviceW. T. Wyckoff Glass bottles, jars, and the like. Machine for manufacturingF. W. Knowles et al.
Grinding machineJ. G. Soderberg Grinding machine, DiskC. H. McCaughey Grinding or surfacing metallic and other
Feeder and exerciser, Poultry. T. Lawry Fence post brace. G. Schneider Fence post constructiou. T. W. Schaefer Fertilizer, insecticide and fungicide
Gun sight
Harrow. M. B. Reach Hat clipping device. W. W. Pittman Hat holding device. T. J. Sayre
M. B. Reach Harrow W. W. Pittman Hat clipping device. T. J. Sayre Hat holding device. C. Froehlich Hat pin A. Domenico et al. Hat trimming machine. C. A. Bingaman Hay curing frame. P. Kutchan Hay fork. J. A. Watson Headlight, Dash electric J. Kirby, Jr.
Hay forkJ. A. Watson Headlight, Dash electricJ. Kirby, Jr.

Heating systemB. F. Seymour High temperature resistance furnace, Con- tinuously operatingV. Popp et al. Hinge butt
tinuously operating. V. Popp et al. Ilinge butt
Hub, WheelM. J. and P. P. Adams Hydrocarbon furnaceJ. C. Scrivner Ignition purposes, Inductor generator forII. J. and T. E. Podlesak Ulusory effects. Apparatus for producing
Hydrocarbon furnace J. C. Scrivner Ignition purposes, Inductor generator for II. J. and T. E. Podlesak Illusory effects, Apparatus for producing R. M. Hill Induction coil (2 pats) J. McIntyre Induction motor J. B. Wiard Insulating material E. A. Merrill Internal combustion engine. P. II. F. Spies Internal combustion eugine. W. Rabsilber Internal combustion engine applicable to submarine boats P. Winand Internal combustion engine for air com- pression purposes F. E. Jackson Irrigation gate J. Kissinger et al. Journal bearing. R. S. Brown Knives, Making A. M. Alexander Knitted fabric, Transferrer for G. H. Gilbert Knitting machine H. H. Wildt
Internal combustion engine. P. H. F. Spies Internal combustion eugine. W. Rabsilber Internal combustion engine applicable to submarine boatsP. Winand Internal combustion engine for air com-
pression purposes. F. E. Jackson Irrigation gate. J. Kissinger et al. Journal bearing. R. S. Brown Knives, Making. A. M. Alexander
Knitting machine
Ladder, StepW. P. Newman LampJ. D. Harris et al. Lamp collar, GlassE. W. Bryce Lamp for vehicles, Signal. A. M. Puckett
Knives, Making
Lasting machine (Reissue)S. Snow Latch, Sliding doorJ. A. Giese Leather, Table for setting ontJ. T. Smith LensJ. G. Gueovjian Lens grinding machine. F. Scoville
Lift cutting machineJ. L. Kennedy Lime. Increasing the binding power of basic silicates ofW. Schumacher Link ringG. A. Briggs
Liquid. Apparatus for percipitation treatment of
Lock
Lock strike. J. Defininger Lock washer. G. S. Harris Loom filling replenishing mechanism. H. W. Smith
Loom gage
Mail catching and delivering device
Loom harness mechanism. G. Hetherington Mail boxes, Collection indicator for
Melting furnace J. R. Flaherty Mercury meter E. S. Halsey Metal cutting mechanism G. W. Weiss Metal heating furnace, Regenerative
Metal heating furnace, Regenerative
Milk aerating, cooling and cleaning device. C. W. Ticknor Milk can and the like H. B. Johnston Mold A. Eckhardt H. C. Voight
Motion, Detaching roll
Motor starter, GasC. F. Jenkins Motors, Method and meaus for controlling electricH. W. Leonard Mowing machine lubricating device V. Schiller
Mowing machine lubricating device
Musical instrument, Valved wind
Odometer
Organic compound and making the same W. F. Doerflinger Oxids, Reduction of metallic W. Mathesius
Needle, Tuft yarn. H. Wyman et al. Nut lock. C. Rosser Nuteracker. A. Konarski Odometer. K. Littlejohn Oil burner. G. W. Busch Ore separating apparatus. T. Charlton Ores containing gold and silver. Apparatus for dressing. C. Giesecke Organic compound and making the same. W. F. Doerflinger Oxids, Reduction of metallic. Package, Shipping and dispensing. J. Welsh Padlock. A. W. Dowe Pail, Milk. E. Fink Paper and like bags, Manufacture of. E. Robinson et al.
E. Robinson et al. Paper folding and delivery mechanism O. S. Gauch Paper press, Waste L. H. Hazen Pavement J. O. Wilhelm Pen or the like, Fountain R. E. Decker
glands and obtaining the same
Phonograph. W. Ohliger Photograph shutter. C. C. Spinks Photography, Manufacture of screens or colored surfaces for color L. Dufay

Picker stick holder and nower adjustance
Picker stick holder and power adjusting deviceF. P. Sleeper Pictures, Apparatus for transmitting half-
tone
Pipe cutting and threading tool. J. Geary Pipe raising device. A. Peppin Piston rectifier, Triple valve
Pictures, Apparatus for transmitting half- tone
Pocket, Detachable watchL. Cunningham Pocket knife, Take down
Pool and billiard table stretcher
Potato diggers, Top cutting mechanism for.
Pool and billiard table stretcher.
Pressure reducing gageA. L. Koenig Printing formW. J. F. Maidhof
Printing press, Rotary. W. L. Hamilton PropellerJ. H. C. Alexander
Pulley and bearing therefor. M. II. Avery Pulley couplingJ. Newmann
Pump or blower, Centrifugal. J. J. Stoetzel
Pump valve
Pumps, Means for automaically draining.
Push button system for desks and the
Rail joint. J. A. Bodkin
Rail joint
Railway sleeper M. W. Matthaei Railway tie E. T. Wade
Railway tieJ. W. Clark, Jr. Railway tieC. F. Jenkins
Railway tie,
Railway track constructionT. Catchings Raker gageM. F. Higbee
Range unding apparatusD. W. Adams Rate meter, VariableW. H. Pratt
Razor, Safety A. C. Recker Razor strop holder . E. N. Humphrey
Regulator J. C. Barry Rein guide S. E. Weaver
Resilient wheelW. H. H. Morelock Resins and manufacturing same, Solution
of A. Hesse Respirator and pressure equalizer, Combin-
ed. W. F. Merryman Retarding mechanism F. Heath
Rotary engine
Rotary impact engineC. J. Coleman Rules, Support for plumb II. Platt
Saw clamp E. Melaun Scaffold, Sectional V. Abrams
Scale, Gravity box
Scale, Weighing
Screw diank heading machine
Resinent wheel. W. H. M. Morerock Resinent wheel. W. H. M. Morerock Respirator and pressure equalizer. Combined W. F. Merryman Retarding mechanism F. Heath Roller frame M. J. Fitzpatrick Rotary engine W. F. Neely Rotary explosion engine P. M. Rodigin Rotary impact engine C. J. Coleman Rules, Support for plumb H. Platt Saw clamp E. Melaun Scaffold, Sectional V. Abrams Scale, Gravity box C. D. Bishop Scale, Price indicating. A. J. Bayley et al., Scale. Weighing W. F. Drew Screen construction, Window. A. Kamin Screw blank heading machine P. L. Robertson Screw driving machines, Feeding mechanism for automatic. W. P. Hunt et al. Screw joint, Safety. O. Rosset et al., Seal, Car J. W. Prine Seed cotton cleaner and rock catcher E. D. Schmitt Seed cotton cleaner and rock catcher L. Spiyak
Sealing head for applying jar caps
See cotton cleaner and rock catcher
Seed cotton cleaner and rock catcher
Sheet, DecorativeJ. F. Gasthoff Sheet feeding machineH. C. La Batt
namenting
(Continued in December Number)

McCall's Magazine and McCall Patterns

For Women

Have More Friends than any other magazine or patterns. McCall's is the reliable Fashion Guide monthly in one million one hundred thousand homes. Besides showing all the latest designs of McCall Patterns, each issue is brimful of sparkling short stories and helpful information for women.

Save Money and Keep in Style by subscribing for McCall's Magazine at once. Costs only 50 cents a year, including any one of the celebrated McCall Patterns free.

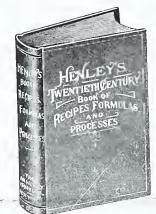
McCall Patterns Lead all others in style, fit, simplicity, economy and number sold. More dealers sell McCall Patterns than any other two makes combined. None higher than 15 cents. Buy from your dealer, or by mail from

McCALL'S MAGAZINE 236-246 W. 37th St., New York City

Note-Sample Copy, Premium Catalogue and Pattern Catalogue free, on request.

The Most Valuable Techno-Chemical Receipt Book Published

Henley's Twentieth Century Book of



RECIPES **FORMULAS** AND PROCESSES

Edited by GARDNER D. HISCOX, M. E.

Price, \$3.00 Cloth Binding \$4.00 Half Morocco Binding 800 large Octavo (6 x 9½) Pages.

Contains over 10,000 Selected Scientific. Chemical, Fechnological, and Practical Recipes and Processes, Including Hundreds of so-called Trade Secrets for every business.

To present here even a limited number of the subjects which find a place in this valuable work would be difficult. Suffice to say that in its pages will be found matter of intense interest and immeasurable practical value to the scientific amateur and to him who wishes to obtain a knowledge of the many processes used in the arts, trades and manufactures, a knowledge which will render his pursuits more instructive and remunerative. Serving as a reference book to the small and large manufacturer and supplying intelligent seekers with the information necessary to conduct a process, the work will be found of inestimable worth to the Metallurgist, the Photographer, the Perfumer. the Painter, the Manufacturer of Glues, Pastes, Cements, and Mucilages, the Compounder of Alloys, the Cook, the Physician, the Druggist, the Electrician, the Brewer, the Engineer, the Foundryman, the Machinist, the Potter, the Tanner, the Confectioner, the Chiropodist, the Manicure, the Manufacturer of Chemical Novelties and Toilet Preparations, the Dyer, the Electroplater the Enameler, the Engraver, the Provisioner, the Glass Worker, the Goldbeater, the Watchmaker and Jeweler, the Hat Maker, the Ink Manufacturer, the Optician, the Farmer, the Dairyman, the Paper Maker, the Wood and Metal Worker, the Chandler and Soap Maker, the Veterinary Surgeon, and the Technologist in general.

Among the Recipes given are:

Bleaching, Euching and Engraving Recipes for Glass Making, Paper Making, Recipes for Ointments Mirror-Making Formulas Paint Making Formulas Gilding and Galvanizing Recipes Bronzing, Tinning and Silvering Recipes Recipes for Adhesives Plating and Enameling Recipes Cleaning Processes, Soap Making Leather and its Preparation Recipes for Alloys, Recipes for Solders Photographic Formulas Shoe Dressing and Stove Blacking Recipes Rust Preventive Recipes

Pecipes for Lubricants and Oils Recipes for Dyes, Colors, and Pigments Recipes for Dryers and Inks Recipes for Artificial Gem Making Jewelers' and Watchmakers' Recipes Household Formulas Waterproofing, and Fireproofing Recipes Recipes for Cements, Glues, Mucilages Recipes for Fireworks Alcohol and its uses Recipes for Essences and Extracts Dentifrice, Cosmetic, and Perfume Recipes Tanning Recipes Metallurgical Formulas Hair Restorers, and Depilatories

And many thousands more-Equally important in the Arts and Manufactures

A GREAT BARGAIN \$1.75 Value for \$1.00.

One Year's Subscription for McCall's Magazine, Any 15-Cent McCall Pattern you may select, One Year's Subscription for The Inventive Age.

ALL FOR ONLY









McCall's Magazine

Is a large, artistic, handsomely illustrated hundred-page monthly magazine. It contains sixty new Fashion Designs in each issue. Every woman needs it for its up-to-date fashions, entertaining stories and complete information on all home and personal topics. Over one million subscribers. Acknowledged the best Home and Fashion Magazine. Regular price, 5 cents a copy. Worth double.

McCall Patterns

Are so simple you cannot misunderstand them. Absolutely accurate. In style, irreproachable. You may select, free, any McCall Pattern you desire from the first number of the magazine which reaches you. Regular price, 15 cents.

The Inventive Age.

A journal of manufacturing industry and scientific progress. The indispensable paper for patentees. Contains matter and information not found elsewhere. Regular price, \$1.00 per year.

THE INVENTIVE AGE Publishing Co., Washington, D. C.

The DIAMONI

self-filling and Fountain Pen.

IT IS AWAY AHEAD OF ANY OTHER PEN MANUFACTURED BE-CAUSE OF ITS SELF-FILLING AND SELF-





Price \$2.00. Including one year's subscription to "The

No Lost Time.

No Soiled Fingers.

INVENTIVE AGE PUB'L. COMPANY, WASHINGTON, D. C. Address ---

> SEND FOR OUR FREE CATALOGUE OF BOOKS FOR INVENTORS AND MECHANICS.



Vol. XXIII. No. 12.

Washington, D. C.---December 1, 1911.

SINGLE COPIES 10 CENTS.

NOVELTIES IN LOCOMOTIVES.

Notwithstanding the numerous and notable developments which have occurred in the field of locomotive engineering during the last decade, there is no indication that finality is to be reached in the near future, remarks a writer in Cassier's Magazine.

Every year witnesses some development that may be considered an innovation, and includes a number of designs that are remarkable in one way or another. Last year saw the first introduction of a turbine electric locomotive, and it also witnessed the construction of a locomotive designed for the unprecedentedly high steam pressure of 285 lbs. per square inch. The record also includes the initial appearance of the flexible boiler in practical engineering, and the introduction of at least one new wheel type.

This first illustration shows a Mallet of the Baldwin type using oil as a fuel. The Southern Pacific Railway Company has placed it in operation. This locomotive is equipped with a reheater having a surface of 625 sq. feet. The boiler is provided with 401 tubes, five feet three inches long, and two and a quarter inches

in diameter, for the feed water heater.

It may be stated that the boiler is of the straight steel type, having a diameter of 84 inches with a working pressure of 200 pounds per square inch, the steam being supplied through balanced piston valves to the com-

pound cylinders measuring 26 inches and 40 inches in diameter, with a stroke of 30 inches. Oil fuel is used in the fire box of this locomotive.

> There are 401 iron fire tubes, each measuring 21 feet in length and $2\frac{1}{4}$ inches in diameter. These fire tubes

have a heating surface of 4941 square feet, and this together with the fire box heating surface of 232 square feet, and that of the feed water heater tubes, 1220 square feet, gives a total heating surface of 6393 square feet, the grate area being 68.4 square feet. This 300

ton locomotive and tender has a total wheel base of 90 feet 4 inches, the engine weighing 432,600 lbs. with a weight of 398,-500 pounds on the 16 driving wheels, which are 57 inches outside diameter.

The driving wheel base is 39 feet 4 inches, while the rigid wheel base measures 15 feet, that of the total engine without tender being 56 ft. 7 inches. The tender has a tank capacity for 10,000 gallons of water and for 3,200 gailons of oil fuel. This engine represents the latest type of locomotive for freight service using oil as a fuel with cab in front.

The turbine electric engine (shown in Fig. 2.) seeks to combine the advantages of the steam turbine as realized in stationary practice with the benefits of electric traction in railway service, without the necessity of equipping a line with conductor rails, erecting a generat-

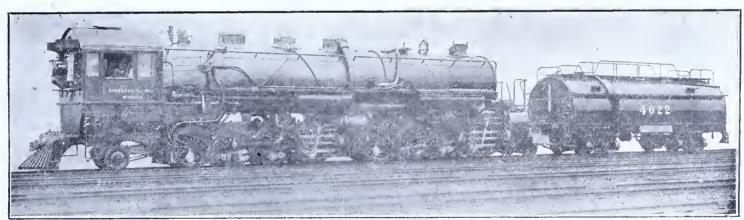


FIG. 1 -- OIL BURNING LOCOMOTIVE.

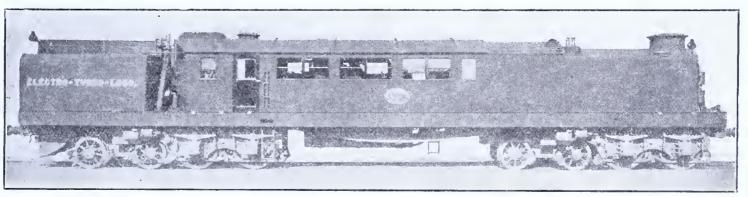


FIG. 2.-- TURBINE ELECTRIC LOCOMOTIVE.

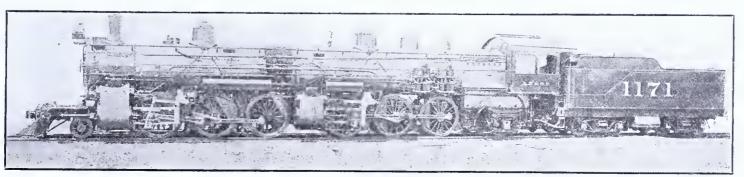


FIG. 3.-ENGINE WITH FLEXIBLE BOILER.

ing station and replacing the steam plant. In this new design, steam is generated in a boiler of the ordinary locomotive type, and is led to an impulse turbine running at a speed of 3,000 revolutions per minute, to which is directly coupled a continuous current variable voltage dynamo. This supplies energy of from 200 to 600 volts to four series wound traction motors, the armatures of which are built on the four main or driving axles of the locomotive. The exhaust steam from the turbine passes into an ejector condenser, and is, together with the circulating condensing water, delivered eventually to the hot well. As the steam turbine, unlike the reciprocating steam engine, requires no internal lubrication, the water of condensation is free from oil, and consequently is returned from the hot well direct to the boiler by means of a feed pump. The water evaporated by the boiler is, therefore, returned to the boiler again and again, and the supply of water carried in the tanks is actually circulating water for condensation purposes. This condensing water is circulated within practically a closed cycle by means of small centrifugal pumps driven by auxiliary steam turbines placed alongside the main turbine and dynamo. The condensing water passes from the tanks through the first pump, then through the condenser, where it is heated in condensing the exhaust steam, then to the hot well, then through the second pump to the cooler, situated in front of the locomotive, where it gets the full benefit of the air in motion. The water then returns to the supply tanks. As the condensation of the exhaust steam deprives the locomotive

The flexible boiler was introduced in American practice by the Atchison, Topeka and Santa Fe road, which uses the largest engines in the world. Some difficulty has been experienced with these in providing for flexibility on curves, owing to the great length of boiler. There are two ways of making the boiler flexible: in each case the boiler is in two sections, but one engine has a ball and socket connection, while the other, herewith shown (see Fig. 3) has a device of accordian character adapted to close in on one side and open out on the other on severe curves. Each section of the boiler is separate, so that the intermediate flexible chamber is not subjected to steam pressure and therefore constitutes a combustion chamber. The furnace gases pass from one section to the otber through a large cylindrical flue, so that cinders and ashes cannot lodge in the flexible connections. After passing through one set of boiler tubes the furnace gases traverse the tubes of a superheater, then they pass through the intermediate chamber to a reheater for the low pressure steam and thence to the tubes of the front boiler. It may be noted that superbeating is now a world practice, and that nearly all the new locomotives are equipped in this manner.

A NEW MACHINE TOOL.

Much has been written pertaining to the working spindle. It was further to the problem of boring square holes, demonstrated that the carriage of the and the attempts towards the con- average lathe did not offer sufficient struction of a practical tool for this stiffness to hold the working pieces class of work have been numerous. rigidly in position, which is one of Various devices in the shape of at- the vital points in obtaining perfect

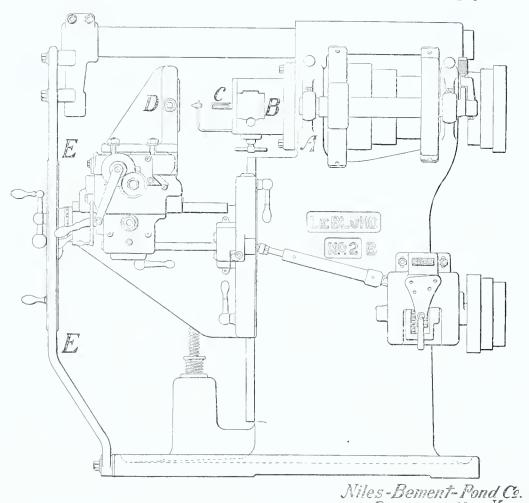
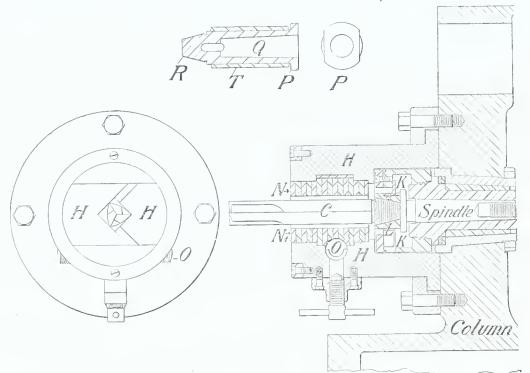


Fig. 1.

boiler of the usual exhaust blast tachments for ordinary latches or square holes. which induces the draft through the milling machines, etc. have been refirebox and boiler tubes, forced draft cently offered in the market, but they Company of Cincinnati, Ohio, who is provided by a small turbine driven have failed to produce satisfactory enjoy the reputation of being one of results, owing to the difficulties in the our best machine tool designers, have

The R. K. LeBlond Machine Tool

111 Broadway New-York



Figs. 2. & 3.

proper mounting of the device on any standard machine tool.

Experiments along this line have conclusively proved that such attachments cannot be fastened rigidly enough to withstand the amount of side thrust caused by the eccentric jarring motion of the cutter, at right angles

taken an interest in the development of this problem, and after careful study of the subject, and its former weaknesses, have come to the conclusion that this work can only be done satisfactorily with a special machine tool, in which the arrangements for cutting square holes are embodied

in the design, thus guaranteeing absolute rigidity and accuracy.

Considering however, that a machine which would do nothing else but cut square holes, would be too great an investment to many customers, the R. K. LeBlond Machine Tool Co. have designed a combination machine tool which is not only adapted for milling square holes, but also possesses all the features of a standard milling machine.

The machine is designed along the lines of the LeBlond No. 2 Plain Milling Machine, with such changes as are of advantage to the successful operation of the square hole cutters.

The principle used in this work is the same as employed in other devices, namely, the revolution of a triangular shaped bit, similar to an end mill, in a stationary master guide, which in appearance is much like a regular drill chuck. Entirely different from all previous devices, this stationary guiding chuck is fastened directly to the column of the machine by means of a flange, which entirely eliminates all the former troubles of lost motion.

The cutter receives its motion from a special driving member which is fastened to the nose of the spindle. This driving member not only causes the cutter to rotate, but at the same gives it freedom to travel eccentrically in the master guide.

The whole arrangement for cutting square holes, simple in itself, is easily detached in practically no time, and the machine is ready for regular milling work or vice versa. As it is advantageous when cutting square holes in tough material to previously drill a round hole, the machine is furnished with an appliance for operating ordinary twist drills which engages in the arrangement for boring square holes. Both operations can be done in succession in the same work-piece.

As the attachment for cutting square holes projects considerably beyond the nose of spindle, it would on a standard machine decrease the working space in front of the cutter. Therefore, the column bearing the main spindle has been set back to gain the distance taken up by this projection, thus maintaining the full working range of the table.

In order to secure absolute rigidity of the work pieces on the table, a special brace is provided which connects the knee with the overhanging arm, as well as with the base of the machine.

As the cutting of square holes requires a very fine feed, the machine is arranged with two separate cross feeds, one for regular milling work and the other for extra fine feeds starting from .(01 part of an inch.

In cutting square boles the work must be held absolutely rigid, a special vise being furnished with the machine for this purpose.

The possibility of using this macbine for regular milling work as well as for cutting square or rectangular holes and other odd jobs, will make it a valuable addition to the equipment of every toolroom, to say nothing of its use for regular manufacturing purposes where square holes are employed for commercial work.

· Figure 1, shows a side view of the complete machine.

Figure 2, shows an axial cross section through the square hole cutting arrangement.

Figure 3, illustrates the appliance for the operation of twist drills.

A description of this machine is as follows:

Figure 1: A, column with main spindle bearing. B, detachable chuck for cutting square holes. C, the outter. D, special vise for holding work. E, special brace connecting knee with overhanging arm and base

Figure 2: The square arrangement shown in this cross section consists mainly of two separate bodies:

First the driving member K, which is screwed to the nose of spindle. Second the stationary guiding chuck H, which is bolted to the column over the main bearing. The driving member contains a floating dog L, into which cutters C engage by means of a taper thread. Behind this dog is a floating thrust plate which takes up the end thrust of drills. The stationary guiding chuck contains the master guide, which consists of two jaws NN^{1} , forming an adjustable square guiding hole in which the drill C is forced to describe its particular cam motion. O is a right and left hand screw for opening and closing these in accordance with the size of drill used.

Figure 3: For boring round holes in connection with the arrangement for cutting square holes, a round bushing T is inserted in the square guiding hole, which serves as a bearing for the shank R, which contains a regular Morse taper Q. This shank is fastened in the driving member by means of the taper thread R, and describes a regular revolution inside the bushing T.

Any size twist drill can be inserted in the Morse cone and the whole arrangement can easily be taken off.

The machine is furnished with complete equipment for regular plain The range for boring square holes is from one-quarter of an inch to two inches.

It is evident that the installation of such a machine tool, which is always handy as a regular plain miller, will open new fields of manufacture and will be of value to every toolroom for special work of all kinds.

Prizes for Inventors of War Appparatus.

Monetary prizes, as an incentive to inventors to develop apparatus to alleviate the horrors of war, are announced by the American National Red Cross.

Some years ago the Empress of Russia established a prize fund of 100,000 rubles (\$50,000) to stir the interest of inventors, that apparatus to care for the wounded might develop as rapidly as did the engines of destruction. The first prizes were given in London in 1907, but next May the International Red Cross Conference will be held in Washington, when prizes ranging from \$3,000 to \$500 will be awarded.

Information as to needed methods and apparatus for improvements of conditions on the battlefield will be furnished by the Red Cross.

AUTOMATIC FOG SIGNAL AND LIGHTHOUSE.

drawings show the details of construction and method of operation of a most interesting electrically operated automatic and unattended fog signal and lighthouse. constructed of concrete and wrought iron reinforcement. It is equipped with electric motors, pumps, air compressors and controlling switches, so arranged that by the movement of the controlling switches ashore the whole equipment may be placed in operation. The siren on the tower, it is said, can be heard for thirteen miles, and the light, which is operated by acetylene gas, is turned on automatically at night by clockwork. In the unattended lighthouse and fog signal tower there are no

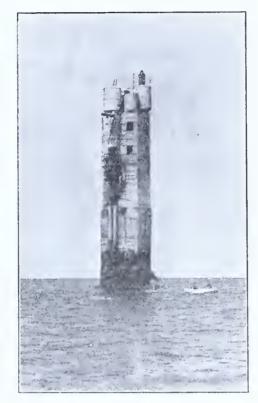


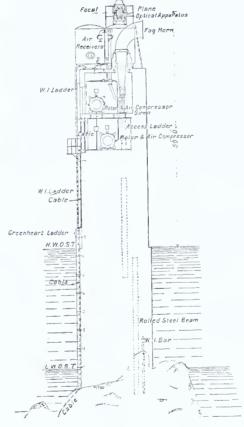
FIG. 1.—AUTOMATIC LIGHTHOUSE.

living rooms, a shore generating station and dwelling house of two stories being provided, where the keepers reside and electric current is generated and compressed air supplied for use, in case of accident to the submarine cable or machinery in the tower. The fog signal is worked by means of a submarine cable from the shore a mile and a half away, it not being possible on account of prevailing conditions for the keeper to live in the tower, which is located on an isolated rock known as the Platte Fougere, in the British Channel...

In the shore generating station there are two Crossley oil engines, each of which drives a three phase alternator. These generators have revolving armatures, the alternating threephase current being taken off from slip-rings. The engines operate at a speed of 250 revolutions per minute, and the alternators, (each having a capacity of 11½ kilowatts) supply a current of a frequency of 25 cycles per second and a pressure of 600 volts. Each alternator has its own excitor directly occupied to its shaft, the

THE accompanying illustration and direct current for excitation as well as the alternating current for operating the devices in the tower, being controlled from four white marble panels. This main switchboard carries the necessary switches and instruments for the engine room as well as for handling the motor. One of the engines also drives an air compressor of the Reavell type, held in reserve for use in case of trouble with the machinery in the tower.

The combined lighthouse and fog signal station at the rock is equipped with two quadruplex air compressors, directly coupled to the induction motors of the squirrel cage type, as indicated in the accompanying drawing. These motor driven compressors can be controlled either by hand or by means of an electro-magnet. operated from the main land through the submarine cable by a changeover switch. The compressors are designed for continuous lubrication, as they are required to operate for long periods without attention. The cable connecting with the shore weighs 45 tons per mile, and measures 11 inches incircumference. It is provided with three cores for carrying the 3 phase current for power purposes, together with two smaller conductors for telephone service and for switching purposes.



-Details of Tower.

The five conductors are insulated with gutta-percha and the larger wires for power service weigh about 1100 pounds per mile, the gutta-percha weighing about half this amount. The cable is sheathed with galvanized steel wires over a protection in the form of a spiral brass case.

On the shore there is also a siren of Scottish design, made of gun metal and driven by a small air motor. It is automatic in its action and

gives two blasts at periods of 11 minutes, the clock gear being operated by a motor winding gear.

The megaphone or horn located in the upper chamber of the tower is four feet in diameter at the mouth, and the air receivers and water cooling tank are located on the bottom platform. One of the air receivers is located 80 feet above low water and supports the lighting apparatus.

The tower is octagonal in shape and measures from 14½ to 17 feet across the faces. Portland cement is used, inside of wrought iron molds in the lower section of the tower, while concrete is utilized above and iron bars are sunk into the rock as a reinforcement for the cement, steel beams being built in the concrete to give strength where there is great tension. This ferro concrete structure has a door 46 feet above the rock, the platform and the light being respectively 64 feet and 80 feet above the foundation of the tower.

Acetylene gas is used for lighting the optical apparatus automatically, the gas being supplied in cylinders containing acetone, the gas being turned on at night by clockwork and turned off at sunrise. Provision is made for automatic control for the short nights of summer as well as the long nights of winter. The optical apparatus has a linear burner nine inches in diameter, constructed at Paris. This automatic equipment has demonstrated that by means of acetylene gas and electricity, an unattended lighthouse and fog signal station may be successfully operated while exposed on an almost inaccessible rock to the full force of the Atlantic ocean during the most severe storms.

The unattended fog signal station and lighthouse was provided on account of the constant occurence of disasters at the entrance to St. Peter Port, Guernsey, which greatly affected the passenger traffic to the island. The steamers which run from Southampton to Guernsey and Jersey were in constant danger on account of the unguarded and unlighted state of the coast when entering the Little Russel Channel, and this fog signal station and lighthouse has been of great value to navigation.

New Zealand Offers Bonus to Inventors.

Twelve thousand pounds sterling, or more than \$58,000, will be paid by the New Zealand government as a bonus to the inventor or inventors who develop improve methods to be used in connection with the preparation and utilization of New Zealand hemp.

This offer is open until November 30, 1913, and is made by the New Zealand minister of agriculture, under authorization from his government.

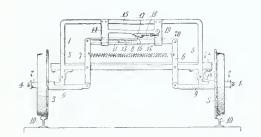
It is the hope of the New Zealand government that the competition will develop a machine or apparatus that will be efficient in the extraction and dressing of fiber from the New Zealand hemp plant, that will provide for the utilization of the by-products obtained during the processes of extracting the

CLEVER NEW PATENTS.

Track Gage —Brush.—Twin Bung Spout.
Display Rack.

Track Gage.

The spreading of tracks is one of the most prolific causes of railway accidents, and an invention by James Dobbins, of Farmington. Mo., which is intended to register automatically the separation or contraction of rails, and signal when they are spread to the danger point, will doubtless be found valuable in reducing the number of wrecks. It is adapted to be attached to a hand car or track tricycle, and has a U-shaped frame with legs bent to form axles on which gage wheels 3, as shown in the cut, are journaled. The wheels are allowed lateral movement on the axles. Levers 6 and 7 are pivoted to each leg, their lower ends pivoted to sleeves around the axles and their upper ends connected by a spring which presses the flanges of the wheels against the

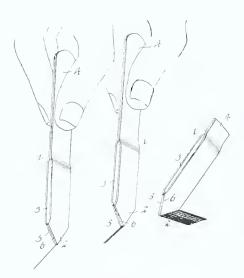


rails. Gage birs 11 and 12 are pivoted to the levers 6, the former having inward flanges which receive the bar 12 and provided with graduation marks to coact with the end of the bar to show the separation of the rails. These bars operate in the frame 14, and the bar 11 has on its outer end & tripping dog to engage a tripping lever 17 on the frame, which has its upper end arranged in the path of a spring operated clapper 18. This engages a bell 19 when the lever 17 is released from clapper. An offset 20 on the trip lever permits this to drop and release the clapper, whereby this spring will carry into engagement with the bell 19. The outer end of the trip dog is rounded, so that when the bar 11 returns to normal, the trip lever rides up thereon to its normal position.

In operation, the spring keeps the flange of the wheels in engagement with the rails, and as these widen, the bars operate over each other and show on the scale the degree of separation. The dog operates in the path to engage beneath the trip lever 17. When the tracks are spread to the danger point, the dog passes the offset in the trip lever and allows it to drop, thus releasing the clapper and ringing the bell, whereby the operator's attention is invited.

Brush.

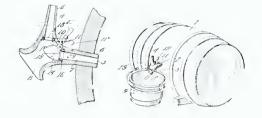
A novel construction of brush, of the sort used for lettering signs, striping vehicles, etc., has been patented by George Rollins Penn, of Dallas, Texas. It has a fountain containing the paint or other liquid, and is made of a single strip of flattened bendable material, with one end substantially W-shaped to provide points. The reservoir is provided by



bulging the sides of the blank, the end terminating in a flat handle. The points are bent inward so as to contact wi h each other and close the reservoir. The brush being formed of bendable material, these points may be separated from each other a suitable distance to provide for the marking of various sized lines, as shown in the accompanying illustration. It is to be noted that the open mouth of the reservoir is always arranged at the top of the butts, and that the points are open adjacent their points of connection with the closed floor or lower portion of the reservoir, the said opening of the points being effected through the medium of a knife or some such implement.

Twin Bung Spout.

A twin spout that will fit bung holes of various sizes and diameters, provided with means to instantly cut off or permit the flow of liquid from a barral, and the spouts of which are at right angles so that the closing member may be thrown from one to the

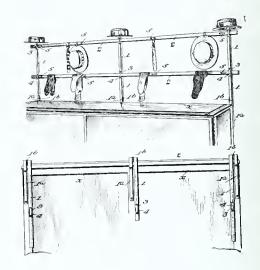


other, is shown in a recent patent by Charles D. Bowyer, of Camden, N. J. and Le Roy N. Boorse, of Philadelphia. By reference to the drawings, which show a perspective and sectional view of the device, it will be seen that the twin spout is formed in a single casting which comprises the

two spouts 4 and 5, one smaller than the other (so as to fit varying bungs), the two arranged at right angles. Each has threads to engage those of the bung hole. When the liquid is flowing, it enters the bore 7 and passes through the outlet opening 8 into the receptacle 9. The device between the spouts is provided with a slot 10 with ears 11 on each side and a lever 12 between the same. The end of the lever, which extends into the chamber of the twin spouts, has a closure member 14. This is held normally closed by a spring when the device is applied to a barrel. When it is wished to open it, the lever is operated, and it may be oscillated between the two spouts as desired. The closure member has a washer 19, designed to co-operate with a washer 18 in each of the passageways of the spouts, and the lever can be held in one position or another, to close or open the passage ways of the spouts.

Display Rack.

It is an axiom among shopkeepers that the battle is half won when the attention of the custome 'is favorably attracted. If this is true, a recent invention for use in stores, to display dry goods, gents' furnishings, etc., will be found of great assistance in promoting sales. It is a rack or skeleton frame arranged to be attached to a show case, and composed of foldable parts which permit it to be extended for use, or folded back out of sight when desired. The accompanying outs show the rack in these two positions, and as may be seen. it consists of posts with base portions to be attached to the case, and horizontal bars connecting the upper parts. Two of the longer parts 1 are hinged to the base so as to fold inward, and the middle upright is hinged so as to fold in either direction. When folded, the uprights are pendent on the back of the case. The several relatively longer parts of the uprights are provided with notches to receive the horizontal bars and buttons to hold them in place, these being readily adjustable. When the parts 1 are extended vertically in alinement with their bases, the horizonal bars hold the parts 1 firmly in position, since at least two of them fold in opposite directions. When the rack is not desired for use, the



horizontal bars are detached and laid on top and back of the show case, and the uprights turned down. This practically removes the rack from sight, and constitutes no obstruction to the use of the showcase in the usual manner. The whole device offers a quickly adjustable and convenient method of displaying goods for which no room may exist in the case, or to which it is desired to call special attention. The frame is rigid, light, and permits the display of goods in a conspicuous manner. It is the invention of Thomas N. Figuers, Jr. of Columbia, Tenn.

To keep themselves posted in the progress of the arts in which they are interested, inventors and manufacturers should subscribe for the INVENTIVE AGE, which publishes a list of all patents issued each month. The low subscription price and the character of the publication entitle it to the support of all the inventors of the country.

PATENTS

Send Your Business Direct to Washington Saves Time and Insures Better Service.

Trade Marks,
Copyrights
and
Designs.

My office is close to the U. S. Patent Office. Personal attention given—OVER THIRTY YEARS PRACTICE. Book "How to Obtain Patents," etc., sent free. Patents procured through E. G. Siggers receive special notice, without charge, in the—

INVENTIVE AGE

Illustrated Monthly-Twenty-third Year.
Terms, \$1.00 a Year.

E. G. SIGGERS,

918 F STREET, N. W., WASHINGTON, D. C.

LATEST COURT DECISIONS IN PAT-ENT, COPYRIGHT AND TRADE-MARK CAUSES.

ANTON v. GRIER BROS. CO.

(Circuit Court of Appeals, Third Circuit. March 23, 1911. 185 F. R. p. 796.)

1. PATENTS—INVENTION — COMBINATION OF OLD ELEMENTS.

To sustain a patent with a combination of old elements, a new result must be obtained, which is due to the joint and co-operating action of all of the old elements.

2. PATENTS-INVENTION-MINER'S LAMP.

The Anton patent, No. 756,151, for a miner's lamp, claim 2. is void, as covering a mere aggregation of old elements, which do not co operate to produce a new result.

HESTONVILLE, M. &. F. PASS. RY. CO. et al. v. McDUFFEE et al.

(Circuit Court of Appeals, Third Circuit. Feb. 21, 1910. 185 F. R. p. 798.)

1. PATENTS-VALIDITY AND CONSTRUCTION -Effect of Delay and Amendments OF APPLICATION.

Where an applicant for a patent after his application has been rejected and lain dormant for years, during which time the art has made rapid progress, amends the same, and on the basis of such amendment makes claims of a different character, it is the duty of the courts to scrutinize the patent issued carefully to see that it has not been enlarged in scope beyond the invention disclosed in the original application.

2. PATENTS - VALIDITY- LIMITATION BY AP-PLICATION-ELECTRIC RAILWAYS.

The Schlesinger patent, No. 546,059, for an electric railway, is void, having been granted on an amended application and claim filed nine years after the original application and seven years after it had been rejected, and which constituted a distinct departure therefrom. The original application was for a device intended for the purpose of localizing the effect of accidents on the line, but in the amended application made, after the art had made a rapid and general advance, was broadened both by additions and omissions.

WILLIAMS PATENT CRUSHER & PUL-VERIZER CO. v. PENNSYLVANIA CRUSHER CO.

(Circuit Court of Appeals, Third Circuit. Nov. 28, 1910, 185 F. R. p. 805.)

PATENTS-VALIDITY AND INFRINGEMENT-DUMP-ING CAGE FOR CRUSHERS AND PULVERIZERS.

The Williams patent, No. 843,729, for a dumping cage for crushers and pulverizers, was not anticipated and discloses invention. Claims 1 and 2 also held infringed.

BOYER v. CLEVELAND PNEUMATIC TOOL CO.

(Circuit Court of Appeals, Sixth Circuit March 24, 1911. 185 F. R. p. 808.

PATENTS - INFRINGEMENT - PNEUMATIC

The Boyer patent, No. 667,863 for a pneumatic hammer, narrowly construed, as it must be in view of the prior art, is not infringed by the device of the Richards patent, No. 735,589.

FRANK et al. v. BERNARD.

(Circuit Court of Appeals, Second Circuit. Feb. 14, 1911. 185 F. R. p. 812.)

PATENTS - SUIT FOR INFRINGEMENT-PUNISHMENT FOR VIOLATION OF INJUNC-TION—REVIEW.

An order imposing a fine on a defendant for violation of au injunction restraining in-fringement of a patent, based on findings made by a master after a full hearing, confirmed by the court, will not be disturbed by an appellate court, where it is supported by sufficient findings.

MATTEAWAN MFG. CO. v. EMMONS BROS. CO.

(Circuit Court of Appeals, First Circuit. March 6, 1911. 185 F. R. p. 814.)

1. PATENTS—INVENTION—EVIDENCE.

The art of sticking a layer of fur to a felted hat body is not a matter of common

knowledge, and the question whether a patent for a process and machine for performing such operation discloses invention can only be determined by evidence, and cannot be adjudicated on demurrer.

2. PATENTS-INVENTION-MACHINE FOR FUR-RING HATS.

The Baglin patent, No. 508,462, for a machine and process for sticking fur to felted hat bodies, held not void on its face for lack

NEW YORK BUTTON WORKS V. CRESCENT BUTTON CO. et al.

(Circuit Court, S. D. New York. Sep. 19, 1910. 185 F. h. p. 820.)

PATENTS—SUIT FOR INFRINGEMENT—PRE-LIMINARY INJUNCTION.

A preliminary injunction, restraining infringement of a patent, will not be granted, although the patent has been sustained in a prior suit, which does not clearly appear to have been contested, and where on its face, as well as on the showing made, its validity appears doubtful.

AUTOPIANO CO. v. AMPHION PIANO PLAYER CO.

(Circuit Court of Appeal, Second Circuit. March 15, 1911. 186 F. R. p. 159.)

1. PATENTS-INFRINGEMENT.

The O'Connor patent, No. 789,053, for a web-guiding device, is not for a pioneer invention, but for an improvement on prior devices regulating the lateral displacement of note sheets in musical instruments, the defects of which the paientee sought to correct by substituting surface control of the sheet for edge control, which, as stated in the specification, was objectionable because the edges of the sheet were thereby injured; and, in view of such statements, of the prior art, and of the proceedings in the patent office, the patent cannot be construed to cover an edge-controlled device. As so limited held not infringed.

2. PATENTS-INFRINGEMENT.

A patent for the very character of device which a prior patentee had rejected as objectionable and sought to avoid, as shown by his specification, carries with it a strong presumption that the later device is not an infringement of the earlier patent.

3. PATENTS-"PIONEER PATENT."

A pioneer patent is one covering a function never before performed, a wholly novel device, or one of such novelty and importance as to make a distinct step in the progress of the art as distinguished from a mere improvement or perfection of what had gone before.

INTERURBAN RY. & TERMINAL CO. v. WESTINGHOUSE ELECTRIC & MFG.

(Circuit Court of Appeals, Sixth Circuit. March 24, 1911 186 F. R. p. 166.)

1. PATENTS—ANTICIPATION — PRIOR ABAN-DONED APPLICATION.

An abandoned application for a patent is not a bar to a patent to a later applicant, either as negativing novelty or as a printed publication.

2. Patents — Prior Public Use —Suffi-CIENCY OF EVIDENCE.

In order to defeat a patent by evidence of prior public use more than two years before application for the patent was made by another, the proof must be very clear and definite, and as a general proposition mere oral testimony, depending on the memory of the witnesses, without the production of any visible sign or contemporary memoranda certainly fixing the character of the alleged anticipating structure, will not be regarded as sufficient, although such rule is not inflexible.

3. PATENTS—SUIT FOR INFRINGEMENT—PRE-LIMINARY INJUNCTION — REVIEW OF

The general rule which should govern the appellate court in reviewing orders granting preliminary injunctions in patent cases is that the order will not be disturbed, unless it clearly appears that the court below has exercised its discretion upon a wholly wrong comprehension of the facts or law of

4, PATENTS—SUIT FOR INFRINGEMENT—PRE-LIMINARY INJUNCTION-EFFECT OF PRIOR

When there has been a prior adjudication sustaining a patent and the infringement thereof in the same or in another circuit,

proofs, a Circuit Court should, on motion for preliminary injunction, sustain the patent and leave the determination of its validity to the final hearing; and the rule is more emphatic when the former decision was by a court in the same circuit.

5. Patents—Suit for Infringement—Pre-LIMINARY INJUNCTION.

Where a patent in suit has only a very short time to run, and the interruption to defendant's business may be seriously affected by the granting of a preliminary injunction, it may be properly refused, on the giving of a sufficient bond to respond to any decree for damages recovered.

6. PATENTS - VALIDITY AND INFRINGEMENT -CONTROLLING SWITCH FOR ELECTRIC RAIL-WAYS.

An order granting a preliminary injunction against infringement of the Lange & Lamme patent, No. 518,693, for a controlling switch for electric railways, affirmed.

WM. A. ROGERS, Limited, v. COHANNET SILVER CO.

(Circuit Court, D. Massachusetts. Nov. 23, 1910. 186 F. R. p. 241.)

TRADE-MARKS AND TRADE-NAMES-MISUSE-DECEPTION OF PUBLIC.

Where defendantsilver company, without color of right, used the name "Rogers" on the silver-plated ware of its manufacture. and had acquired no right to use the name, derived either from the original Rogers companies, or the subsequent legitimate users of the name, but used it solely to mislead and defraud the public, complainants, having a qualified property right therein, were entitled to a preliminary injunction to restrain such use.

MYGATT v. M. SCHAFFER-FLAUM CO. (Circuit Court, S. D. New York. Feb. 8, 1911. 186 F. R. p. 343.)

1. PATENTS-INFRINGEMENT - ELECTRIC LIGHT REFLECTOR.

The Mygatt patent, No. 821,306, for a prismatic reflector for electric lights composed of a single piece of glass having external reflecting prisms, parts of which are cut away in definite patterns to permit the light to pass through, in view of the prior art, cannot be construed to cover any interruption of the reflecting prisms in definite patterns but must be limited to the particular patterns shown. As so construed, held not infringed.

2. PATENTS-INFRINGEMENT-DESIGN FOR LAMP REFLECTOR.

The Mygatt design patent, No. 37,983, for a design for a reflector for electric lights, held infringed.

NEW JERSEY PATENT CO. et al. v. MARTIN.

(Circuit Court, N. D. Iowa, Central Division. Feb. 22, 1911. 186 F. R. p. 513.)

1. Patents - Violation of Injunction AGAINST INFRINGEMENT-PUNISHMENT FOR CONTEMPT.

Where complainants in a suit for infringement, after filing a petition to have defend-ant adjudged in contempt for violation of a preliminary injunction, filed an amended bill, and on that and the original bill a consent decree was entered for complainants in which they waived all claim for damages, and no costs were awarded in favor of or against either party, complainants were not thereafter entitled to have a fine imposed on defendant in their favor in the contempt proceedings sufficient to reimburse them for their counsel fees, costs, and disbursements in the main case.

2. Patents - Violation of Injunction AGAINST INFRINGEMENT.

A defendant held in contempt for violation of a preliminary injunction against infringement of a patent.

3. Contempt—Power to Punish—Former ADJUDICATION.

Where at the time set for hearing a motion to punish defendant for contempt for viola-tion of an injunction, ex parte affidavits taken by petitioners were suppressed on defendant's motion, and the hearing was continued for the taking of testimony, such proceeding did not put defendant in jeopardy nor constitute a bar to a subsequent hearing.

where its validity was contested on full WESTINGHOUSE ELECTRIC & MFG. CO. et al. v. OHIO BRASS CO.

> (Circuit Court D. New Jersey, Feb. 10, 1911, 186 F. R. p. 518.)

1. PATENTS - SUIT TO OBTAIN PATENT --LACHES.

The remedy by bill in equity to obtain a patent which has been refused by the Patent Office, given by the Rev. St. \$ 4915 (U. S. Comp. St. 1901, p. 3392), is a part of the application for the patent, and is governed by the rule as to laches declared by Rcv. St. \$ 4894 (U.S. Comp. St. 1901, 3384), which provides that the failure of an applicant to prosecute his application within one year after any action therein shall be regarded as an abandonment, unless it be shown that the delay was unavoidable.

2. PATENTS - SUIT TO OBTAIN PATENT-Laches—Unavoidable Delay.

An allegation in a bill to obtain the issuance of a patent under Rev. St. § 4915 (U.S. Comp. St. 1901, p. 3392), filed more than a year after the application was relused by the decision of the Court of Appeals of the District of Columbia in interference proceedings, that complainants brought suit within the year against the successful applicant, to whom the patent was granted, learned for the first time after such suit had been pending for several months that the defendant had assigned the patent, whereupon that suit was dismissed and the present one was brought against the assiguee, does not show that the delay was "unavoidable," within the meaning of the Rev. St. § 4894 (U. S. Comp. St. 1901, p. 3384); there being no allegation that the assignment was not recorded, northat complainants had no means of ascertaining the fact of the assignment.

3. Words and Phrases - "Unavoidable DELAY."

A delay caused by negligence is uot "unavoidable."

DOBLE v. PELTON WATER WHEEL CO. (Circuit Court, N. D. California, Dec. 30. 1910. 186 F. R. p. 526.)

1. PATENTS-VALIDITY AND INFRINGEMENT -Hydraulic Nozzle.

The Doble patent, No. 926,055, for a needle regulating deflecting hydrautic nozzle for the propulsion of tangential water wheels, was not anticipated, covers a true combination, and discloses patentable invention; also held infringed.

2. PATENTS— ANTICIPATION — ACCIDENTAL USE OF DEVICE.

The mere accidental employment of a feature or element of a device where its real value, for a purpose for which it is afterward put in use by another, is not recognized at the time of such accidental use, cannot be invoked to anticipate a patent for the later device.

3. PATENTS — INVENTION — SIMPLICITY OF DEVICE.

Simplicity of a device is no evidence of want of invention nor of obviousness, but in such cases the question of patentability may, and in many cases must, be determined largely from the results attained.

STEVENS v. RODGERS BOILER & BURNER CO.

(Circuit Court of Appeals, Sixth Circuit, April 25, 1911. 186 F. R. p. 631.)

1. PATENTS — INVENTION — REFUSE BURNING FURNACE.

The Steveus patent, No. 843,971, for a refuse burner to consume the waste product of sawmills, having a water jacket formed by an outer and inner cylindrical iron shell, discloses but a single novel feature over those of the prior art, which is in employing braces between the two shells having a slot at the inner end through which the connecting bolt passes to secure them to a radial circumferential flange on the innershell, which gives a slidable connection and allows for the expansion and contraction of the inner shell, and such feature does not involve invention, especially in view of the use of similar counections in the construction of boilers, which is au analogous art.

2. PATENTS — SUITS FOR INFRINGEMENT— EVIDENCE.

Evidence of anticipation by prior devices and of prior use is admissible in a patent suit to show the prior state of the art, although no notice of it was given in the

MECHANICAL INVENTIONS AND DESIGNS

Pasents for which have been procured through the Patent Soliciting Office of E. G. Siggers, Patent Lawyer, Washington, D. C.

Geo. W. Smith, Henrietta, Mo. Two patents.—The object of the invention of the first patent is to provide power transmitting mechanism especially adapted for use on motor vehicles, in transmitting the power from the engine to the driving wheels. and one so constructed which will prevent the elements that operate at different rates of speed being thrown into the action, thus overcoming the common fault of stripping the gears from this cause. The invention comprises the combination with a driving shaft, a sleeve loosely journaled thereon, a clutch connected between the shaft and sleeve comprising elements movable into and out of coaction, a counter shaft, gears connecting the shaft and countershaft, one of said gears being loose upon the former, a clutch for connecting the shaft and loose gear, and means for throwing one clutch into and the other out of action.

The invention of the second patent relates to internal combustion engines, and its principal object is to provide an efficient, light and powerful engine of the opposed cylinder type, that may be well adapted for use in propelling motor vehicles. The engine comprises in combination with oppositely disposed cylinders, pistons operating in the cylinders, piston rod connections between the pistons of each set, a crank shaft disposed transversely of the cylinders and having oppositely disposed cranks, yokes pivoted at their inner ends to the piston rods and having their outer ends journaled on the cranks, a cam shaft mounted on the cylinders, gearing connecting the crank and cam shafts, valve mechanism mounted on the cylinders, and oppositely arranged levers actuated by the cam shaft and associated with the valve mechanisms for operating the same.

Petter C. N. Pederson, Superior, Wisc. Wall Covering.—The invention has for its object to provide a wall structure for buildings, capable of being advantageously employed, either for exterior or interior walls. and when in a finished condition will have a smooth even surface, will not be affected by changes in the atmosphere or temperature, and will obviate the necessity of plaster or the like. The structure comprises a wall covering of boards with a paper covering therefor, said covering comprising a plurality of superimposed sheets of paper cemented together, the outer layer or sheet being provided with a protective or near resisting coating, and the inner layer or sheet being adhesively fastened to the boards at intervals only, the inherent elasticity of those portions of the layer that are not fastened to the boards permitting lateral movement of the boards without cracking the paper.

object to provide a combined pinholder, pen-rack and paper weight, of an attractive, neat and finished appearance for the market. The pinholder is adapted to contain a paper of pins, of an ordinary character, one row of the pins being held in an upright position so that only the pin heads are exposed, permitting the ready removal of the pins without danger of pricking the fingers. The receptacle consists of front, rear and end walls, ears integral with and extending from the end walls and arranged near the rear edge thereof, the

upper edges of said end walls being downwardly inclined from the ears to the front walls, and respectively provided with alined pencil receiving notches, the front wall having a recess extending partway along the same, and the cover pivoted to the ears and having an integral upwardly curved lip projecting beyond the said front wall, the cover at either side of the lip co-acting with the said front wall to retain the cover in the clamped position.

Peter J. A. Schnoor, Holstein, Iowa. Two patents.—The invention of the first patent is designed to improve the construction of safety pulleys, for hoisting and various other purposes, and is equipped with a safety casing which completely encloses the pulley, and is adapted to adjust itself automatically to the flights or stretches of a rope or cable, and capable of effectually preventing the fingers of a person from being caught in the pulley. The device comprises a sheave or wheel, a safety casing composed of two relatively movable hollow shells or sections encasing the sheave or wheel and provided with openings for the passage of a rope, one of the sections having an opening of a size to permit the passage of the sheave or wheel and normally covered and concealed by the other section, and a pivot passing through and connecting the sections and having the sheave or wheel mounted on it.

The pulley of the second patent includes a safety casing comprising inner and outer sections, the inner section being quadrant shaped and the outer section having a substantially circular shape, said sections being provided with sides or cheek plates pivotally connected together at the top, the outer section being provided in its side plates with arcuate slots extending from the center of the casing and arranged concentric with the pivot of the sections or members, and a sheave or wheel having a shaft mounted on the side plates of the inner section and operable in the arcuate

John James Bunting, Chicago, Ill. Two patents.—The invention of the first patent is designed to improve the construction of whiffletrees for twohorse vehicles, and to enable the doubletree and the singletrees to be arranged in the same horizontal plane to eliminate twisting or rolling. At the same time the construction permits a free movement of the singletrees and maintains an equal pull on both horses at all times. The device consists of a tongue, an arcuate doubletree, means connected with the center of the doubletree for pivotally connecting the same with the tongue. singletrees pivotally connected with eyes at the ends of the doubletree, and a base or supporting bracket composed of a central loop or yoke portion embracing and secured to the tongue and laterally extending supporting portions projecting from opposite sides of the tongue and receiving and supporting the doubletree.

The invention of the second patent Charles F. Brown, St. Louis, Mo. relates to leveling and gradient inand contemplates equipping the instrument with reflectors by means of which the horizontal liquid level in the vertical tube of the device may be viewed directly above the instrument. The invention comprises a clinometer having a substantially rectangular metallic frame with a cut-away portion, a sight glass arranged at the cut-away portion, said clinometer being provided at the sight glass with graduations, spaced fenders arranged at the sight glass and mounted on the level frame at the ends of the cut-away portion, and a reflector mounted on the fenders.

Maud M. Billingsley, Beaver Falls, Pa. Drinking Cup.—This invention is a sanitary drinking cup, which is used at public drinking fountains, railway stations and the like. It has for its object to provide a cup with a cover, adapted when the cup is not in use to cover its top and thus exclude all foreign matter from its interior. When it is desired to use the device. the cover may be displaced by a slight tilting of the cup, thus permitting easy access to its interior. The invention combines with a cuphaving a handle, a sliding cover for the same, and means for connecting the cover and the cup so as to permit the cover to be tilted off the top of the cup and supported at one side thereof by simply holding the cup in a slightly inverted position, said means being connected to the cup adjacent the handle so that the cover slides across the top of the handle.

James G. Kyle, Riverside, Cal. Two patents.—The invention of the first patent relates to improvements in pruning shears, and it has for its object to provide a simple, inexpensive and efficient instrument, equipped with blades arranged to open quickly and having an increased opening movement, and also adapted to be operated with sufficent leverage to enable large branches, usually operated on by a saw, to be readily cut, and provided with handles so constructed as to effectually prevent their abutting ends from catching and pinching the hand of the operator. The instrument consists of two pivoted members provided with handles having abutting ends curved inwardly toward each other and provided with end edges beveled outwardly in a direction longitudinally of the instrument to form diverging faces and rounded transversely of the instrument to form diverging side faces, said ends abutting only at the center of their inner edges to prevent the hand of the operator from being caught and pinched between the ends of the instrument.

The invention of the second patent relates to orange clippers, and it aims to improve their construction and to provide a simple, inexpensive and efficient device, designed for gathering oranges and other citrus fruit having thick woody stems adhering so firmly to the fruit that the same must be detached from the tree by clipping. The invention provides means for effectually preventing any possibility of cutting or brusing the rind at either side of the stem in clipping the fruit from the tree. The invention comprises a pair of pivoted members provided with jaws or blades, curved longitudinally and having short cutting edges, a combined guard and stop consisting of a transversely disposed arm or extension curved transversely of the blade and formed integral, and having a concave outer face arranged to rest upon the fruit to support the cutting edges of both of the blades out of contact with the same, said arm having a blunt front end, from which the short cutting edges of the blade extend, and which is adapted to abut against the stem of the fruit, whereby the combined guard and stop is also adapted to prevent the outer end of the jaws or blades from coming in contact with the rind of the fruit.

Alexander R. McDonnell, Campbell, Nova Scotia, Canada. Snap Hook.-The object of this invention is to provide a snap hook for harness or the like, in which a novel and simple construction of spring tongue is employed, the whole construction being simple, easy of manipulation and cheap to manufacture. The hook consists of a body, a hook or bill extending from the body, spaced clamping lugs arranged in pairs upstanding from the face of the body, openings. formed in the body between the lugs. and the bill, and a spring wire tongue bent to engage the bill and normally close the hook, said tongue having its. end portion bent and clamped against the face of the body by the lugs and terminating in forwardly extending portions to bear upon the face of the body, and having their extremities respectively engaging the said openings.

George H. Morgan, Belleville, Kans. Signal Flag.—The signaling device of this invention is especially adapted for use in connection with railroad cars, and it aims to provide means which will keep the bunting of the flag clean, and also preserve it in a smooth. condition. A holder for a plurality of flags is also provided, and this holder is adapted to be readily engaged with or disengaged from a socket which is carried by railroad cars, the flags being so arranged as to be readily furled or rolled up within the holder as desired. The holder has also separate compartments, each provided with doors, which, when shut, will positively exclude the dustor rain. The invention comprises top and bottom plates, a division plate centrally mounted between the said plates to form compartments, said top and bottom plates being respectively provided with alined openings, which are arranged centrally with respect to each compartment, doors respectively hinged to one edge of the division plate for closing the compartments, and flag holding shafts respectively arranged in each compartment and journaled in the said alined openings.

Charles Schaeffer, Paris, Texas. Two patents.—The invention of the first patent is a crude oil burner. designed to provide a device of simple and inexpensive construction, efficient in operation, and which may be placed within a fire box of any ordinary stove or range. The burner consists of a burner pan, a trough provided with depending supports adapted to rest on the bottom of the pan and thereby hold the trough in spaced relation to the pan, said trough having a longitudinal shallow recess in its top, a feed pipe extending from one side of the trough and provided in its upper side near its lower end with an opening forming a communication between its bore and the said recess in the top of the trough, the said trough, supports and feed pipe being formed of one piece, and a fuel pipe entering the outer end of said pipe and of less diameter than the same, whereby an air space is provided between the two

The invention of the second patent is an animal trap and relates particularly to that class of traps which are placed over a receptacle to catch and confine the animal after the trap. is sprung. The invention consists of a frame, a trip plate pivotally mounted in an opening of the frame, pivot members attached to and extending diametrically across the underside of said trip plate, the outer ends of said pivots projecting beyond the edge of said trip plate and adapted to fit in bearings on the inner peripheral edge of said frame, the inner end of one of said pivots extending upwardly through the center of said trip plate and terminating in a hook for holding the bait, and the inner end of the other pivot member extending downwardly and adapted to encircle a weight, said weight being adapted to keep said trip plate in a horizontal

position.



Advertisements inserted in this column for 10 cents a line (about 7 words) each insertion. Every new subscriber sending \$1.00 to The Inventive Age will be entitled to the Age one year and to five lines three times FREE. Additional lines or insertions at regular rates.

FOR SALE-U. S. Patent No. 999,406, dated Aug. 1, 1911. Sack Holder. Will selloutright or on a royalty. Address, Charles C. Skelton, Butler, Indiana.

For Sale—U. S. Patent No. 1,002,557. Fluid Gage. The simplest and cheapest to manufacture. Invention intended for autos. Can be used in the opening for filling the tank. Address, James H. Birchard, Box 229, Kenosha, Wisc.

FOR SALE-Patent No. 976,988, dated Nov. 27, 1910. Wave Motor. Strongest and cheapest in the world. Will generate electricity at a minimum expense, Sure to pay a large income to promotors. Wish to sell outright. Apply to Benjamin Cutler, Crawfordsville, Oregon. feb

PAR SALE—Patent ginseng-shade, by practical grower. Indispensable and labor saving in the cultivation of ginseng and golden seal, a growing industry. Will be a profitable business for some lumber manufacturers. Will explain upon application. Address, L, B. Hetrick. Route 29, Elwood, Ind.

For Sale-U. S. Patent No. 993,223. Improved quick adjustable wrench. Betyet. Big money maker for somebody. Will sell part or entire right to the highest bidder, with working model thrown in. Address, Clyde O. Carlyle, Clyde, N. Dak.

FOR SALE-Patent No. 1,003,167. Combined Water Tower and Fire Escape. Will sell outright this valuable patent. All offers considered. Address, Erasmo Magliocca, No. 655 Main St., Woburn, Mass.

F OR SALE-U. S. Patent No. 907,919. Box Lid Clamps. Will support box lid at any desired inclination for display purposes. Very simple device. Address, C. J. Turner. Monticello, Iowa.

FOR SALE—Canadian patent on a woven wire stretcher. The only machine that pulls the wire up to and past the end or corner post, thus avoiding the necessity of setting an extra or anchor post. Address. J. H. Matthews, Monticello, Iowa.

HOR SALE—Patent No. 998.118, dated July 18, 1911. Improved knife for cutting broom-corn. Easy to operate. Can remove the leaves from the corn stem without inserting the fingers under the cutting edge. Will sell for cash to the highest bidder. Address, Emil A. Peterson, R. D. No. 1, Falun Kansas.

FOR SALE—Patent No. 1,000,503, dated August 15, 1911. Expansion Reamer. Very simple and profitable. Can be extended to various degrees. The blades can be readily exchanged. Address. E. Ferencik, 366 66th Ave.. West Allis, Wisconsin.

FOR SALE — Patent No. 995,819. Aeroplane Automatic Control. Does not interfere with manual control. May be locked leaving full manual control or used in unison. Extra weight about twenty pounds. Address, James L. Walker, Kamela, Oregon, dec

For Sale-Patent No. 996,045, dated June 27, 1911. Engine. Will sell outright or on royalty. Guaranteed to save one-third fuel with twenty per cent added power and speed. Address, G. W. Baker, Box 83, Brown Station, New York.

For Sale-Patent No. 950,459, dated Feb. 22, 1910. This device can be used for coal shafts and also for elevators. No matter bow many times the rope breaks it never fails. No time wasted. As soon as the rope is fixed you can start and hoist again. Address, John Skaba, Box 89, Braidwood, Ill.

FOR SALE—Patent No. 997,932, dated July 11. 1911. Rail Joint. Will mean the saving of thousands of dollars daily. Will iusure smooth riding and prevent the pounding of wheels over joints. Eliminates all bolts and fish plates. Address, Arthur Munchausen, Box 103, Independence, La.

For Sale-Patent No. 885.557. An improved bolt-holder for preventing the rotation of bolts while the nuts are being removed or tightened up. An indispensable tool for the blacksmith and farmer. Address, C. T. Tarver, Hollywood, Ark.

FOR SALE-Patent No. 978,844. Automatic Car Dumper, Just the trick to be used around mines for dumping coal. For further information, write Van C. Calhoun, Dublin, Ark.

FOR SALE-Patent No. 977,423. Movably supported lantern carrier by which a lantern may safely and easily be suspended in a barn. Address, Andrew J. Aune, Milton, N. Dak. jan

For Sale-Patent No. 992,719, dated May 16, 1911. Spring Wheel for Automobiles. No danger of puncture: is very practical and cheap to make. Will sell for moderate price. Address, Grant Leeper. 514 South Church St., Visalia, California.

For Sale — Patent No. 1,003,831, serial No. 583,231. Holder for Drinking Cups. Individual, sanitary, ornamental, Principally for public schools and offices in states and cities where sanitary laws have been passed. Enquire of J. B. Walker, P. O. Box 145. Rush Springs, Oklahoma.

FOR SALE—Patent No. 1,001,337. Mine Cage Signal. A cheap and reliable signal system, for all kinds of deep mines. I will sell, lease, or form company to manufacture. It is fireproof and rust-proof. The cost of maintenance should not exceed \$1,00 per year for 39. Address, Lee Bayer, Willisville, Ill. jan

FOR SALE outright—U. S. Patent No. 991.496. dated May 9. 1911. Sewing Machine Guard. Surrounds the bobbin winder and driving wheel. Protects clotb from grease and dirt. Iu no way conflicts with the operator. Will fit any machine. Address, Mrs. Gertrude Frye, Eureka, Kan. jan

For Sale-Patent No. 998,233, dated July 18, 1911. A new game board. Very interesting. Will sell outright or on a royalty. Address, Ray S. Crocker, Wellington, Ohio.

FOR SALE — U. S. Patent No. 995,536, dated June 20, 1911. Automatic Syrup Skimmer, Cash sale. Interested parties address, Andrew J. Hardin, Quincy, Fla.

FOR SALE—Outright U. S. Patent No. 984.003. "Aseptic Twin" Clinical Thermometer Case. Splendid practical device for physicians and nurses. Address, Joseph C. Jenkins, Lititz. Pa.

F or Sale—Patent No. 996,312, dated June 27, 1911. Insulator, Is particularly adapted to withstand sleet and storm. Does not need any sbort wire to tie same, and because of lying close to timber cannot easily be broken by stones tbrown by boys. Will bold two wires as well as one and with the same ease in handling. Because of its safe construction is specially adapted for use in cities. For full particulars address, T. D. Childress, Ansted, W. Va.

WANTED.

W ANTED-A company or firm to manufacture rotary engine, patent No. 995,076, U. S. A. on shares or royalty. Address. T. G. McGonigle, Lambton Mills, Ont. Canada. dec

W ANTED—To correspond with manufacturers regarding the manufacture and placing on the market of two good patents baving practically an unlimited field for their operation. Address, P. O. Box 30, Falling Spring, W. Va.

WANTED a Company in the U. S. to manufacture my saw-fitting device, patent No. 972,789, dated Oct, 10, 1910. Also a company in Canada to manufacture same device, Canadian Patent No. 124,345, dated March 8, 1910. I will sell either or both of said patents. Address, C. R. Pierce, Rainier, Washington.

WANTED—Two or three persons with some capital to correspond with a patent owner of a new meritorious article. Practice on model very satisfactory. Will not sell patent but will join in company. Address, F. D. F. Box 28, Waterbury, Conn.

WANTED—Not for sale but want a company to manufacture my manure loader on royalty, Patent No. 918,695. Address, Lars C. Peterson, Osage City, Kansas.

CHAS. F. LAGANKE

MANUFACTURER OF

HIGH GRADE SPECIALTIES

MODELS AND EXPERIMENTAL WORK,

SPECIAL TOOLS.

Card Building.

118 St. Clair Ave. N. E., Cleveland, Ohio.

Correspondence Solicited.

Electrical Review and Western Electrician

Published weekly from the center of the industry, this publication is in the best possible geographical position to gather and present the most important and interesting news of the entire electrical industry.

SUBSCRIPTION PRICE

U. S. 83.00 per year. Canada \$4,00 per year. Foreign Countries \$6.00 per year. Sample Copy Free

It is seen and read by practically every buyer of electrical material in this country and abroad. Advertising rates on application.

ELECTRICAL REVIEW PUBLISHING CO., 507 Marquette Bldg., CHICAGO.

A NEW BOOK FOR INVENTORS Patents and How to Make Money out of Them,

By W. B. HUTCHINSON.

This is the only book published, giving a detailed and full account, from the author's actual experience, of just what steps are necessary from the time the invention is conceived, to the time it is sold, with a clear and concise resume of the law and practice, legally and commercially, of trade-marks and copyrights. It also tells accurately How and What to invent. How to sell Inventions, Place them on the Market, Interest Capital in them, and to successfully Promote a Stock Company. It also contains an index of forms worth double the price of the book to any one interested.

ELEGANTLY CLOTH BOUND.

GOLD STAMPED. \$1.00 Postpaid.
Sent with one subscription to AGE for \$1.50

Or will sell separately.

The Inventive Age Pub. Co.,

918 F St., N. W. WASHINGTON. D. C.

HALF-TONES ZINC ETCHINGS ... DESIGNS...

LANMAN

ENGRAVING

COMPANY

PROCESS ENGRAVERS, ILLUS
TRATORS, DESIGNERS.
TRADE-MARK DRAWINGS
EXECUTED.

"Quality and Speed"

POST BUILDING

Fourteenth St., and Pennsylvania Ave. N. W. Phone, Main 673

A VALUABLE OFFER TO INVENTORS.

A Complete Outfit of Printed Matter for \$20.

- 1. A zinc etching of your invention for use in printing letterheads, envelopes, circulars, etc.
- 2. One thousand printed circulars.
- 3. Five hundred envelopes with your name and address printed in the corner.
- 4. Five hundred letterheads with a cut of your invention, and your name and address neatly printed thereon.
- 5. A list of manufacturers in the special line of your invention.
- 6. A form letter to be followed in conducting your correspondence with manufacturers and others.
- 7. Four dozen deeds useful in selling state, county, town or shoprights.

 Address:—

INVENTIVE AGE PUBLISHING CO. Dept. O. WASHINGTON, D. C.

ATTENTION INVENTORS!

LISTS OF MANUFACTURERS FURNISHED.

We have increased our facilities for furnishing lists of manufacturers, and now cover every line of industry. The names are obtained from well known directories.

Our charge for each list is one dollar,

In ordering, please state specifically the class of manufacturers desired. Address: Inventive Age Pub. Co., Dept. M. 918 F. St., Washington, D. C.

Every subscriber when sending \$1.00 is entitled to a free advertisement, not exceeding five lines, cf any patent in which he may be interested. The ad, will be inserted three times.

	THE INVENTIVE AGE PUBLISHING CO., Washington, D. C.
	I herewith enclose \$1.00 for one year's subscription to
	"THE INVENTIVE AGE."
	I also enclose ad. for insertion in the (Patents for Sale*) (Want*) column of your paper. NAME
ı	NAME
	P. 0
ı	

*Please indicate in which column you want the ad. inserted.

N. B.—Remit in the way most convenient.

Inventive age

Established 1889.

Published monthly by

THE INVENTIVE AGE PUBLISHING CO..

National Union Building, 918 F Street, N. W., Washington, D. C.

THE INVENTIVE AGE is sent, postage prepaid, to any address in the United States, Canada, Mexico, Hawaii, and Porto Rico, for ONE DOLLAR a year; to any other country, postage prepaid. One Dollar and Twenty-Five Cents.

Correspondence with inventors, mechanics, patentees, and manufacturers, is invited. The columns of this journal are open for the discussion of such subjects as are of general interest to its

Technical matter is particularly desired. We want practical information from practical men.

THE INVENTIVE AGE is independent.

Special facilities for furnishing cuts of any patented device together with descriptive article. Business specials 10 cents a line each insertion: 7 words to the line. No advertisement less than 25

Address all communications to

THE INVENTIVE AGE FUBLISHING COMPANY, WASHINGTON, D. C.

Entered at the Post-office as 2nd class matter.

WASHINGTON, D. C., DECEMBER 1, 1911.

INVENTORS THEIR OWN ATTORNEYS.

There are many reasons why an inventor should employ an attorney in applying for his patent. We know there are unskilled attorneys, many of whom know so little about patent practice that probably the majority of inventors, if they had to depend on them alone, would be better off without representation. This, however, does not justify an inventor, who has a patentable invention to protect, in acting as his own counsel. Every day in the Patent Office there are seen inventors searching the patent records without the assistance of counsel, and it is well known that a certain percentage of applications filed each day in the Office are presented by inventors on their own behalf. We have heard it said that inventors prefer to deal with the Patent Office directly, because they are afraid of attorneys. If inventors would take the trouble to inquire among their friends, or to ask their Congressman, or their banker, or some one in Washington, or to look through Dun's and Bradstreet's reports, they would get in touch with attorneys who would represent them in an intelligent, competent and conscientious manner. A safe rule to follow is not to employ attorneys whose advertisements are found in every magazine, and who tell of millions of dollars alleged to be offercd for various inventions. They are the attorneys against whom we would especially warn the public.

In filing an application for patent and prosecuting it through the Patent Office, an inventor has to be familiar with the Rules of Practice, numbering over 200 different regulations. He must also be conversant with many decisions of the courts, and with certain unwritten details of practice

expressed in either rules or decisions, but which are nevertheless binding.

Let us take the case of an inventor who attempts to prosecute his own application, and presents it to the Patent Office with the first government fee, the specification and drawing, all in compliance with the form furnished by the Commissioner of Patents. In the first official action he will probably receive a letter from the Examiner suggesting errors in the specification or drawing, and citing certain patents, and recommending that the inventor employ the services of a skilled attorney. It is often the case that the inventor has failed to disclose in his drawing or in his description all the features of his invention, and if he should finally decide to employ an attorney, the latter would find upon examination that because of these errors a new application has to be filed. Thus the inventor has to put up with the delay of filing a second application, not to speak of the expense, whereas if he had consulted a skilled attorney in the first instance, he would have saved

Suppose, however, that the application should proceed further in its prosecution, and the inventor should attempt to amend the specification, claims or drawing to meet the objections, and a second official action should be received. In this action the Examiner will probably cite a reference to anticipate some of the claims of the application. How is the inventor to determine whether the reference is a proper one? He is not familiar with the decisions of the courts, or of the Patent Office in determining what is an analogous art. He is not familiar with the doctrine of double use or new use. He is not conversant with the rule which allows an applicant to ante-date the filing date of a patent already issued. He may find his invention shown in the patent, but not claimed. He may argue with the Examiner that because the patent does not claim his invention, the patent is, therefore, not a pertinent one, but such argument would be to no purpose. If he were skilled in the practice of prosecuting applications for patent, he would know that whether the patentee claims his invention or not, it is a pertinent reference and a bar to his application unless he can ante-date it, or show by affidavits that he made his invention before the patentee filed his application. The preparation of these affidavits requires the best skill of an attorney, as they have to be drawn up with a full knowledge of certain decisions of the Commissioner of Patents and an understanding of the inventor, no matter how intelligent he may be, can represent his own interests under such conditions. The chances are that he would later accept the patent as a pertinent reference because it shows but does not claim the invention, and cancel his claim, whereas this might have been saved if an ante dating affidavit were filed.

If an applicant were prosecuting his own application, and a patent were which have never found themselves cited against one of the claims, he

might decide to cancel that claim in order to procure the allowance of the patent, intending to put the claim in a subsequent application. If he should proceed in this way, he would find himself confronted years later with the claims previously canceled. The Patent Office would declare that the patent already issued, showing the previously claimed subject matter, but not claiming it, was a bar to the grant of a subsequent patent. The decisions hold that failure to claim a feature in a patent amounts to the dedication of it to the public, unless the subject matter could not have been claimed in the patent, either because of a requirement for division or because it was a separate subject-matter of invention.

We can cite numerous instances to show how abstruse and technical the prosecution of a patent application may be, but we think we have said enough to indicate the absurdity of an inventor trying to represent himself in procuring a patent. It is an old saying that "a man who is his own lawyer has a fool for a client," and from our experience in connection with applications for patents, we are convinced that the inventor who represents himself in trying to obtain a patent is just a little bigger fool than the other fellow.

JOINT AND SOLE INVENTION.

When two men have worked on an invention, it is often very difficult to determine the question whether or not they are joint inventors. To constitute two persons as joint inventors, it is not necessary that exactly the same idea should have occurred to each at the same time, and that they should together work out the embodiment of this idea in a perfect machine. Such a coincidence of ideas would scarcely ever occur. If an idea comes to one, and he constructs a machine embodying it, but it is not a complete working machine: and another person takes hold of it and by the joint labors of the two, one suggesting a certain feature and the other another, a perfect machine is finally evolved, a joint patent may properly issue to them. If, upon the other hand, one person invents a distinct and separable part of the machine, and another person invents another distinct and independent part of the same machine, it is impossible for the two inventors to join the distinct ideas in a single application and apply for a common practice in interference contests. No patent, for in this case, the inventors are sole inventors and not joint, and each should obtain a separate patent for his own invention.

> To state the proposition in another way, if A B observes the need of a new device to perform a particular function and thereupon conceives the plan of such a device and proceeds to embody that plan in a successful working machine, all without assistance from any other person, then it is clear that he is the sole inventor of

that machine. But to constitute a man an inventor, it is not necessary for him to have skill enough to embody his invention in a working machine, or in a model or even a drawing. If a man furnishes all the ideas needed to produce an invention, he may avail himself of the mechanical skill of others to practically embody or represent his contrivance, and still be the sole inventor thereof. In such case, however, the man must furnish to the person making the drawing or model of the machine, full directions as to the mechanical ideas to be developed in the machine. If he merely states to the draftsman or model maker or the machinist that he wants him to draw or make a model or a sample of a keyless lock, or hammerless gun, without stating how the lock or the gun is to be constructed, then he is not the inventor: and if the draftsman, or model maker, or machinist proceeds to devise a keyless lock or a hammerless gun, using his own ideas, then the draftsman, model maker or machinist is the inventor and not the one who suggested the device to be developed.

A true case of joint invention, as above noted, is where one man conceives the general plan of a machine, but his conception is incomplete and he finds himself unable to make the device work according to his original ideas. He calls on another party for assistance, and by their joint labors, one suggesting one feature and the other another feature, a machine is finally produced, which will work and which differs materially from the conception of the first inventor. The two parties can then join in applying for a patent with full confidence that their claim as joint inventors will be sustained.

It is of importance that the question of inventorship should be properly determined in presenting an application for patent, for if a patent is taken out in the name of two parties as joint inventors, when one is the sole inventor and the other only a partner, the patent will be declared invalid when it issues. We know of numerous cases where, in order to save an assignment fee, the inventor has taken his partner in with him in the application. This is a most illadvised proceeding. In the case of an interference in the Patent Office, the question of joint inventorship is usually brought up, and it is very difficult to prove. There are also numerous instances in court records where patents have been declared invalid when proof was furnished that the parties in whose names the patent was issued as joint inventors, were not joint inventors in fact. The cost of an assignment is so small that we have often thought it strange that an inventor would put his patent in jeopardy by having his partner named as a joint inventor, when in fact he should have been included only as an assignee. One would think that the oath that accompanies every application for patent, and that every inventor must take, would prevent such errors, but apparently these oaths are sometimes taken lighfly, and without consideration of their solemnity or contents.

Moving Against the Wind.

A vehicle that will move against the wind is described in the Literary Digest. The wagon has a small windmill mounted in front of it, so geared to the wheels that when it is rotated it will make the wheels turn and thus propel the vehicle. The wind causes the wirdmill to turn, the force is communicated to the wheels, and the wagon moves forward against the wind. The same principle applied to a sailing vessel should enable it to go straight ahead without tacking. Air resistance is one of the chief obstacles to speed in automobiles, railway trains, etc., since the resistance increases in the proportion of the square of the velocity. That is, if you double the speed you increase the resistance by four. It is planned to place a turbine wheel in front of the vehicle, to break up the air as a rotary snow plow disposes of snow, and at the same time make use of its energy to help propel the wagon.

Leak Locator.

The recent discovery of a leak of 20,000 gallons of water a day from a pipe in this city, due to the gnawing of a thirsty rat, calls attention to the new methods of locating leaks. The loss in this case was discovered by a wireless locator, one of the most delicate and ingenious contrivances used hy leak hunters in their efforts to correct pipe corroding. It enables a teak hunter to place the trouble without digging over a wide area of ground.

The operator attaches a wire to a house spigot and carries it out through the yard and attaches it to a street hydrant, so establishing an electric circuit through the wire and the underground service pipe, the location of the latter being problematical.

The locator itself is an induction coil with a telephone receiver attached, which the operator places between the wire just mentioned and the ground, and he carries the wire and the coil about the yard. When the coil is finally held directly over the service pipe, a peculiar buzzing sound is heard in the telephone receiver, and thus the location of the pipe is established beyond doubt.

More delicate is the detectorphone, also an instrument but lately employed. It magnifies and transmits sound, and is so sensitive that the ticking of a watch 25 feet away may be heard distinctly amid a confusion of noises. By means of this instrument a flow of water in pipes is detected, and the operator knows that water is wasting somewhere if there is a flow after all normal openings are closed.

Long Distance Subway Telephone.

There has just been completed the last link in a conduit which will connect the cities of Boston, New Haven, New York, Philadelphia, Wilmington, Baltimore and Washington, and furnish a means for telephonic communication underground, immune to weather conditions. The storm at the last inauguration, with the resultant demoralization of telegraph and telephone wires, and the isolation of the

capital from the world at an important season, emphasized the necessity of some means of communication which would not be subject to accidents of climate. The line was planned soon afterwards, and it has just been completed. The section between Boston, New York and Philadelphia was finished first, and the southern portion later. This last section, between Washington and Wilmington, was carried through by three working forces in different states along the line. First the line was surveyed by one party; a gang digging ditches, putting in manholes and making ready for the laying of the cable followed. The final work of pulling the cables through the manholes and splicing them was done by a third force.

The ditches were carried just below the frost line and four creosoted wooden pipes, called pump logs, were laid in the bottoms thereof and joined through their tight fitting butts, each junction heing treated with a preparation to make it waterproof. The manholes, which were built at every 500 feet, are of reinforced concrete, and were made at a factory in Maryland built specially for the purpose. The daily progress on the work was about two and a third miles, including the crossing of hridges and streams. The telegraph and telephone cahles, four in number, have the copper wires so arranged that three complete telephone and eight complete telegraph circuits can be secured from each two pairs of the large-gauge wires. There are also a number of pairs of smaller wires contained in the lead sheath, intended for service between intermediate cities. Each cable is capable of allowing 99 telephone subscribers and 296 telegraph operators to carry on communication simultaneously.

Turning Stumps into Charcoal.

The difficulty of clearing land has for years hindered the development of many districts in the Western States. The cost of removing the stumps after the trees have been cut has been so great that very little of the logged-off land has been converted to agricultural purposes. A new process for getting rid of these stumps is now being tried in the State of Washington. It is described in a recent number of Popular Mechanics. Instead of dynamiting the heavy stumps to get them out of the ground, or of using donkey engines to loosen their grip on the soil, the plan is to turn them into charcoal in the ground, thus enriching the soil, cutting to a minimum the labor required to clear a tract of land, and reducing to perhaps \$20 per acre the present almost prohibitive cost of \$75 to \$150 for preparing the land for the farmer.

Hundreds of thousands of acres lying between the Rocky Mountains and the Pacific Ocean are awaiting agricultural development. Reforestation is one problem that must be solved, as now there is no comprehensive movement to promote a second growth of timber on lands suited for forests, but not for agriculture. For the immediate future the development of the agricultural areas means much more

than reforestation, as years will be required to hring a second crop of fir, cedar and pine to marketable size.

Experiments in the new method have shown that stumps may he removed at an expense as low as 25 cents apiece. The work can be done hy inexperienced hands. The bark is removed from the stump in the spring, to allow the outside of the stump to dry thoroughly. Often a trench is dug about the stump, or the ground around leveled. Then a ring of wood is piled closely about the stump, to a height of two feet, and a foot in thickness. Dry rotten wood such as is found in abundance on new land answers the purpose. This is then covered with sod, except a small space on the windward side. Fine kindling is placed in this space, and fire started and allowed to burn until the ring of wood is well alight, when the open space is covered with bark or grass. The fire is not allowed to burn through the covering, more sod being added as needed. The secret of burning the stump properly is to keep the covering intact. If the roots are kept from the air and re-covered as soon as the earth caves, they will burn out complete'y. Large stumps have been burned out to a depth of 15 feet. The process is not rapid, but the work can be carried on in connection with other farm labor, with little additional ex-

Arc Lamp Without Carbons.

Ever since Sir Humphrey Davy first exhibited the beauties of the carbon arc, the idea of an electric arc has always been associated with carbonsan intensely luminous vapor of carhon, under terrific temperatures, due to the electric current and the resistance of the vapor. To get the vapor, you volatilize the carbon into infinitesimal particles and feed it into the crater of the arc. That is all there is to the lamp. Even the flaming arc is simply the same old carbon supply, with the addition of coloring mineral salts. But suppose we enclose this arc in a tube, and let the varor he some sort of a condensible material, and at the same time a conductor of electricity of high resistance. Then we get the arc as before, but the vapor, after passing along the tube, can he condensed in a suitable chamber at the ends, and is ready for another trip. It is a curious thing, hut the particles of carbon in the arclamp are not necessarily burnt. For the most part they are merely heated to incandescence and fly off into the atmosphere.

In the same way, a metal may be found that will not hurn or oxidize, and yet he heated into incandescence by the current, and give out light, but not hurn. If such a metal could be found that would not condense later into solid and unmanageable form, we would have an arc without carbons, non-renewable, continuous.

The regenerative flame arc, says *Popular Electricity*, is one answer to this demand, using the vapor over and

Europe and is exploited by one company at home. But among the few metals that will condense into liquid form and thus answer our proposition of a carbonless arc, mercury is the only one in common use, and easily ohtainable. And it gives the other answer for a continuous arc, for it will vaporize under the heat of an electric current, and will readily condense back into the liquid, once out of the region of the arc. The familiar green mercury lamp is an example of this metal, used to make light. But as glass is the material for the tube, and as it melts at the comparatively low temperature of 1500 degrees F., you cannot get the mercury arc very hot, and this involves two unfortunate results-the tube must be long and unwieldy to get enough resistance at that temperature, and the color will be an unpleasant green, falsifying all color values and robbing the lamp of many fields of usefulness. To increase the temperature, make the tube more compact, and obtain white and yellow instead of green rays, has been the ohject of scientists for years. After much effort and discouragement, the mineral quartz, which it had been thought impossible to fuse and work. was finally combined in a flux that welds it to glass without melting the latter. Only the tube which holds the arc is quartz, the condenser bulb and trunnions being of blown glass, welded to the quartz tube. With this device a temperature of 2500 degrees of heat is practicable. The mechanical construction is the same as that of the mercury lamp. The current first passes through a central selenoid, which it energizes, tipping up the bulb so that the mercury flows across the bottom of the tube, thus establishing a path for the main current. This hoils the mercury, and the current flows through both the hoiling mercury in the bottom of the tuhe and the vapor above it. In a few seconds the whole of the tube is one arc of vapor, and the resistance has risen to such a point that it cuts out the solenoid by means of a trip hammer magnet. The bulb at once drops. so that no more mercury can get across, but the vapor arc is now established. It keeps up indefinitely, condensing and vaporizing over and over again. The light is a beautiful whitish yellow, brilliant and powerful. With such a lamp, necessitating no renewals of the carbons and no cleaning of globes, the ideal arc seems at hand. Fifty of these lamps, which are known as the Silca-Westinghouse, have been installed in Paris, and one has been introduced into this country. Windows for Umbrellas.

over again before it gets a chance to

solidify. It is used somewhat in

Umbrellas with windows have been placed on the market by a concern which believes there is sufficient reason for such an innovation to make it popular. The windows are covered with isinglass, and their purpose, of course, is to enable the user to see ahead when holding the umhrella as a protection against a driving rain, and so avoid collisions.

A

CLASSIFIED list of Patents issued during the month appears in each issue of the INVENTIVE AGE. This keeps inventors and manufacturers posted in the art in which they are most interested.—We will send, postpaid, to any address, printed copies of any U. S. patent, with specifications and drawings, upon receipt of 10 cents per copy.—Please give correct data in ordering.—Address.

THE INVENTIVE AGE PUBLISHING CO., 918 F St., N. W., Washington, D. C.

LIST OF PATENTS

--:0:---

Issued September 19, 1911.

MECHANICAL PATENTS.

(Continued from November Number) Sheet metal brace for corner structures Sheet metal brace for corner structures.

Shoe beating machine, Rotary.

G. S. Covell

Shoe uppers by means of wire, Experatus
comployed asterning. R. F. A. Price
Shoe probability of the structure of the like
comployed asterning. R. F. Sheet
Shoet and the structure of the like
comployed asterning. R. F. Sheet
Shoet and the structure of the like
sign, Illiminated. S. Felver
Shoet and the structure of the like
Sheet of the like
Sheet of the like
Sheet of the like
Shoet of the like
Speak of the like
Speak of the like
Speak of the like
Speak of the like
Spraying apparatus. Horse pack water bag.
Spraying apparatus. Horse pack water bag.
Spraying apparatus. Horse pack water bag.
Spraying apparatus. Horse pack water bag.
Spraying apparatus. Horse pack water bag.
Spraying apparatus. Horse pack water bag.
Spraying apparatus. Horse pack water bag.
Spraying wheel. H. Laubersheimer
Spring heater
Spring

Valve, Automatic checkJ. E. Staples
Valve ball, FlnsbE. E. Walldren
Valve gear
Valve grinding machine H. F. Waters
Vapor burnerJ. B. V. L. Harle
Vanlt, Safe depositJ. W. Cooper
Valve, Automatic check. J. E. Staples Valve ball, Flnsb. E. E. Walldren Valve gear A. D. Skinner Valve grinding machine II. F. Waters Vapor burner J. B. V. L. Harle Vanlt, Safe deposit J. W. Cooper Vegetable cutter L. W. Veitch
Vegetable matter, Treating fresh
Vehicle
Vehicle brake. W. E. Woods Vehicle, Motor. R. Hinff
Vehicle, MotorR. Hnff
Vehicle steering mechanism, Powder- driven
Volticles Collegible cover or head for me-
tor and like
Vehicles, Detachable rim device for road
tor and likeW. Reutter Vehicles, Detachable rim device for road A. Flett
Vanding machine C II Section
VentilatorE. Posson
Vessel loading apparatusJ. 1. Clark
Voltilizon apparatus P. A. Cartor Tr.
Ventilator. E. Posson Vessel loading apparatus. J. T. Clark Vise, Horseshoer's foot. T. K. Snyder Voltilizer apparatus. R. A. Carter, Jr. Voting mechanism, Independent
Wagon jack
Wagon jack. F. S. Chord Walking beam. J. W. Laner Wall covering, Plaster support for
Wall covering. Plaster support for
Wardrobe for berths, Dust proof collapsible
ble II O Crippen
Water closet seat
Water elevator, Pneumatic (2 pats.)
B. R. Pilcher
Water tower and fire escape, Combined
Westernstein C. D. D'Anor
Wattmotor Actatio W. H. Pratt
Wave motor
Wave motor
ble
Weighing device for elevatorsE. P. Kilcoyne Well casing elevatorI. F. Thompson
W. H. and in a classification of E. P. Kilcoyne
Whip look H. K. King
Wind motor C E Shaffer
WindmillJ. McCalley
Window fastener
Wire cloth, ElectroplatingF. J. Root
Wire rope or cable
Wool washer
Wrongh W. F. Washington
Well casing elevator. J. F. Thompson Whip lock. H. K. King Wind motor. C. E. Shafter Window fastener C. A. Kind Wire cloth, Electroplating F. J. Root Wire rope or cable. T. Gore Wool washer. F. G. Sargent Wrench. W. E. Washington
1 ()

Issued September 26, 1911,

MECHANICAL PATENTS.
MECHANICAL PATENTS. Acids or their glycerids with hydrogen. Saturating fatty. E. C. Kayser Advertising apparatus. J. W. Haag Advertising apparatus. J. W. Haag Advertising apparatus. J. W. Troy teroplane. W. A. Crawford-Frost Aerotorpedo appliance. P. E. Chamberlin Agricultural implements. Spring attachment for teeth of L. Willis et al. Ammonium carbonate, Making. J. Bueb Amisement device. J. Kavakos Animal trap. II. II. Reynolds et al. Ammonium carbonate, Making. J. Bueb Amisement device. J. Kavakos Animal trap. III. I. Mainland Anti slipping and skidding device. Arch, Skew. J. B. Luten Arm-seye pad. Combination. A. M. Greau Ash trap for grate fires. W. W. Jackson Auger, Earth. F. H. Chase Automobile cranking apparatus. Antomobile hood lock. J. F. Ebbert Awning. Extensible. C. F. Winberg Bag fastener. G. Goerk Balling press. W. M. Hightower Bands, labels, or wrappers to cigars or other articles, Machine for applying. Barrel-forming machine. R. D. Kinyon Barrel washing machine. R. D. Kinyon Barrel washing machine. R. D. Kinyon Bedstead. F. V. Cooper Rechive. L. A. Aspinwall Beer cooler. J. J. Murphy Bells and the like, Means for driving (ringing) of church. G. L. Halvardson Belt, Abrading mechanism. F. M. Furber Belt fastener. W. H. Bristol Belt, Abrading mechanism. F. M. Furber Belt, Abrading mechanism. F. M. Furber Belt, Abrading mechanism. F. M. Furber Belt, Abrading mechanism. F. M. Furber Belt, Abrading mechanism. F. M. Furber Belt, Abrading mechanism. F. M. Furber Belt, Abrading mechanism. F. M. Furber Belt, Abrading mechanism. F. M. Furber Belt, Abrading mechanism. F. M. Furber Belt, Abrading mechanism. F. M. Furber Belt fastener. W. H. Bristol Belt, Power. B. F. Stidworthy Beverage dispensing apparatus. C. Krieger Reverage dispensing apparatus. G. C. Shepherd Bilder, Temporary (Reissue) (2 pais) G. H. Hillyer Bioycle stand. C. A. Persons et al. Binder, Temporary (Reissue) (2 pais) A. Fono Bolte mud. Apparatus for blowing off A. Fono Bolte M. G. C. Shepherd H. W. P. Marphy Boring elliptica
Arch, Skew
Antomobile hood lock. D. F. Ebbert Awning, Extensible. C. F. Winberg Bag fastener. G. Goerk Bale hook, Automatic. A. F. and A. E. Nygren Baling press. W. M. Hightower Bands, labels, or wrappers to cigars or other articles, Machine for applying.
Barrel-forming machine. R. D. Kinyon Barrel-washing machine. R. D. Kinyon Barrel washing machine. B. Danziger Bed. R. E. Taylor Bedstead. F. V. Cooper Beehive. L. A. Aspinwall Beer cooler. J. J. Murphy Bells and the like, Means for driving (ringing) of church. G. L. Halvardson Belt, Abrading mechanism. F. M. Furber Belt fastener. W. H. Bristol Belt, Power. B. F. Stidworthy Beverage dispensing apparatus. C. Krieger
Beverage dispensing mechanism. G. H. Hillyer Bicycle stand. G. A. Persons et al. Binder, Temporary (Reissue) (2 pats) G. C. Shepherd Blackboard. Hlower, exhauster, and the like
Blowpipe, Rail-boring. T. Kundtz Rfue print machine. C. F. Pease Boiler cleaning device. V. MacKay Boiler flue repairing device. II. J. Tibbens Boiler mud. Apparatus for blowing off
Bolt A. Fono Boring elliptical and circular holes, Tool for W. Garner Bottle and cooler, Combined dispensing L. R. Steel Bottle, Non-refillable O. J. Flack Bottle, Non-refillable O. Sorgan Bottle, Non-refillable E. Susol

Bottle, Non-refillable Bottles, Manufacturing glass O. Box with movable slides fo turesM. J. L. Bracket Brake device, Fluid pressure brake handle. Brake shoe. Brakes, Pressure control	F. S. Whitney s vacnum-wall.
Box with movable slides fo	T. W. Higbee r packing pic- S. Le Guisquet
Bracket. Brake device, Fluid pressure	A. D. Hill .E. A. Emery
Grake handle	.W. S. Adams W. S. Bristol W. S. Thomas
Brakes, Pressure control fluid-pressure	apparatus for .W. V. Turner
Grake shoe Grakes, Pressure control fluid-pressure Grickmaking machine Briquet machine, Rotary C. 1 Griquet machinery, Rotary C. Griqueting, pressing, or briching	e Lnkaesevics
Briquet machinery, RotaryC.	De Lukacsevics
chine Broiler or waffle baker Buckle	D. L. FawcettL. Fey
Buckle	W. Falstrom W. Williams O Handfield
Buckle, Sliding tongue Burial device	. E. Hartman J. A. Johnson
abinet for pole-changers ar	d batteries
'alenlating apparatus 'alenlating devices, Actuati for interest 'alendar and date-finder, P	.C. II. Avery
Tar friction gearT. I	l. Smithington W. McKelvey
'ar, Monorail 'ar roof-frame, Freight 'ar roof Metal	P. Barnes W. K. Lavis W. P. Murphy
Can lock, Milk. Can opener. Car opener. Car frietion gearT. I Car, Hot metal. W. Car, Monorail. Car roof-frame, Freight. Car stake. Car step Car step Car step	J. A. Toomey A. A. Schrader
arbureterarbureter for gas engines. !arbureter, Force feed	B. Benns
Carbureting apparatus Cards, Playing	W. Winter C. F. Aikin
ar step. 'arbureter. 'arbureter for gas engines. 'arbureter, Force feed. 'arbureting apparatus. 'ards, Playing. 'arrier system elevator, Gra. R. 'asting machine, Inlay. 'astings, Making locally har 'atalyzers, Making metallic. 'ement Manufacturing. 'hain. 'hain (2 pats.) 'halk line holder. 'channel-cementing machine. 'heck lock.	D. Hutchinson F. II. Nies
lastings, Making locally har	:dened F. K. Vail
'ement Manufacturing 'hain	C. Daher .I. M. Dodge
Thair (2 pats.) Thalk line holder Thannel-cementing machine	W. D. Schmits
heck lock	C. P. Stanbon W. J. Connell
`hurn	R. D. Simpson F. Lacroix
Tigar moistener Tasp Timbing device	J. Sidebotham G. H. Nearing M. N. Webster
lock, Programloth-cutting machine	A. W. South
Nothes wringer and mangle. Yntchl	L. A. Casgrain
'Intch, Friction	W. C. Lipe L. E. Buchanau other material.
'igar moistener. 'lasp. 'limbing device. 'lock, Program. 'loth-cutting machine. 'lothes wringer. lothes wringer and mangle. 'Intch	r surface F. D. Willey
'ambing muchine food regula	ting device .
	C. Sharp
oncrete block making mach	inc
'oncentrator'oncrete block making mach 'oncrete construction, Inser Concrete laying apparatus 'oncrete mixer, Sectional gr	.W. J. Ahern .A. Gibb et al.
Concrete mixer, Sectional gr	avity F. B. Gilbreth M. A. Lewis
Concrete tie	W. F. Black er for under-
ronnd. Confection immersing maching. C. I	Bertolotti et al.
Concrete mixer, Sectional gr Concrete railway tie Concrete tie Conduit connections, Mark ground	
Lalent Stoom	Bertolotti et al.
'ooking utensil protective de	Bertolotti et alB. Norton .C. W. Sterick evice
ooking utensil protective de	Bertolotti et al. B. Norton C. W. Sterick evice J. W. Carter fever cases J. T. Phelan
Tooking utensil protective de Cooling device for treating Copy holder. Totton presses, feeding tamper.	Bertolotti et al. B. Norton C. W. Steriek evice J. W. Carter fever cases J. T. Phelan G. C. McCune mechanism for E. L. Lee
Tooking utensil protective do tooking utensil protective do tooking device for treating topy holder. Totton presses, feeding tamper. Toupling centering device. Cranes. Winding mechanis	Bertolotti et al. B. Norton C. W. Sterick evice J. W. Carter fever cases J. T. Phelan G. C. McCune mechanism for E. W. Newell m for electric
Tooking utensil protective de Tooking utensil protective de Tooking device for treating Took protective de Took presses, feeding tamper Toupling centering device. Cranes, Winding mechanis jib. Crate, Folding. Tream, Momogenizing.	Bertolotti et al. B. Norton C. W. Sterick evice J. W. Carter fever cases J. T. Phelan G. C. McCune mechanism for E. W. Newell m for electric A. Bode et al. M. Goldstein J. Willmann
Tooling device for treating Copy holder. Totton presses, feeding tamper. Coupling centering device. Cranes, Winding mechanis jib. Crate, Folding. Cream, Momogenizing. Unitivator	J. W. Carter fever cases J. T. Phelan G. C. McCune mechanism forF. L. Lee L. E. W. Newell m for electric A. Bode et al. M. Goldstein J. Willmann C. A. Corwin
Tooling device for treating Copy holder. Totton presses, feeding tamper. Coupling centering device. Cranes, Winding mechanis jib. Crate, Folding. Cream, Momogenizing. Unitivator	J. W. Carter fever cases J. T. Phelan G. C. McCune mechanism forF. L. Lee L. E. W. Newell m for electric A. Bode et al. M. Goldstein J. Willmann C. A. Corwin
Tooling device for treating Copy holder. Totton presses, feeding tamper. Coupling centering device. Cranes, Winding mechanis jib. Crate, Folding. Cream, Momogenizing. Unitivator	J. W. Carter fever cases J. T. Phelan G. C. McCune mechanism forF. L. Lee L. E. W. Newell m for electric A. Bode et al. M. Goldstein J. Willmann C. A. Corwin
Copy holder. Cotton presses, feeding tamper. Coupling centering device. Cranes. Winding mechanis jib. Crate, Folding. Cream, Momogenizing. Cultivator wheel. Current motor, Alternating. Currents, Device for producency oscillatory. Cutter head seenring device. Cutter head seenring device. Cutter head seenring device. Cutton machine, Friction.	J. W. Carter fever cases J. T. Phelan G. C. McCune mechanism for control for electric cases. M. Goldstein J. Willmann C. A. Corwin H. Petersen L. H. Gerdien ucing high-fre- F. Jacoviello L. C. F. Ferri L. H. B. Ross H. A. Fergnson C. S. Washburn
Tooling device for treating Copy holder. Totton presses, feeding tamper. Coupling centering device. Cranes, Winding mechanis jib. Crate, Folding. Cream, Momogenizing. Unitivator	J. W. Carter fever casesJ. T. Phelan .G. C. McCune mechanism forF. L. LeeE. W. Newell m for electric .A. Bode et alM. GoldsteinJ. WillmannC. A. CorwinH. PetersenM. KimbleM. Gerdien ucing high-freF. Jacoviello .L. C. F. FerriM. B. Ross H. A. Fergnson Y. S. WashburnT. S. Waters and making

Disintegrating machines. F	eeding mechan-
Door fastener, Sliding	G. Homan
Door hangerB. R.	Bonney et al.
Drait and bumng gear, Frid	H. Symington
Disintegrating machines, F ism forM. F. Door fastener, Sliding Door gage. Door hangerB. R. Draft and buffing gear, Frie T. Draft gear. Dredger for pnlyernlent mat Drying apparatus Drill mount.	erial
Drying apparatus	.E. A. Bronson
Drying apparatus	I. C. Gammeter
Dyeing apparatus	W. R. Smith
Electric lighting system. T	rain and like
ers and the like forIl.	B. Van Daalen
Electric motor or generator. Electric regnlation	J. L. Creveling
Electric signal Electric switch, Automatic.	D. E. Zinn E. W. Davis
Electrical apparatus contro	ller Sessions
Electrical-conductor hanger. Electrical immersion heater	T. Ware
Electrode arrester, Liquid.	Hanscom et al.
E. Electrolyzing apparatus	E. F. Creighton
	II. Fisher et al.
Engine starter, Internal co	eber Jr., et al. mbnstion
L. V Engine starter, Internal con	. Monlton et al.
Engine starting device	F. Slater
Engines, &c., Composition	P. Huebner Jr. of matter for
cooling journals and sha	fts of G. M. Callahan
Engine starter, Internal con Engine starting device F. Engines, &c Composition cooling journals and shar Engines, Primer for hydroce Engines, Sparking plug for i tion Ergot, Extract of. Evaporating apparatus. Excavating machine	arbonB. Ivor internal combus-
tion Ergot, Extract of	M. Wild
Evaporating apparatus Excavating machine	F. Scheinemann
Evaporating apparatus Excavating machine Exhaust mnffler Expanding machine Extension table (2 pats.). Fare box, Recording Farm gate Fastening inserting mechanis Feather edging machine Feed water regulator, Boiles Fence wost	A. W. Porter
Extension table (2 pats.)	E. Tyden
Farm gate	.L. Z. Prestonsm. B. N. Clary
Feather edging machine Feed water regulator, Boile	.J. N. Bussell
Fence post Fertilizer distributer and p	F. Upchnrch
Feed water regulator, Boiled Fence post. Fertilizer distributer and p Filament supporting stems making. Filing device, Document	T. L. Carter Machine for
making	M. E. Picrson
Fire protection Firearm	F. I. Johnson
Firearm, Automatic Firearm sight	.D. G. Hennick F. C. Chadwick
Firearms, Means for fasten	ing sights on P. Mauser
Firearms, Means for lasten Fireproof window constructi Fish line attaching device. Fish stringer	onJ. G. Braun
Fish line attaching device. Fish stringer	Wickman et al.
Flange joint	. J. Paul et al.
Flexible coupling	A. Bigelman
Fluid pressure entrol	F. E. Martin
Elving muchine	B. Bensen W. H. McKeen
Flying machine Forge Oil burning blacksmi	D. C. Vought
Framing tool	. J. M. Regan J. N. Whitlock
FurnaceJ. B. a Furnaces, Charging electric.	and J. Pomeroy .A. L. Robinson
Gas engineR. \$	S. Moore, et al.
Gas producer apparatus	J. A. Herrick
Gas producer apparatus Gearing Gearing	J. A. Herrick R. C. Sayer A. Alfson
Gas producer apparatus Gearing Gearing Gearing	J. A. HerrickR. C. SayerA. AlfsonT. G. BradyB. Barnes
Gas producer apparatus Gearing. Gearing. Gearing Glass blowing machine Glass, Manufacture of	J. A. Herrick R. C. Sayer A. Alfson T. G. Brady B. Barnes L. Grote
Gas producer apparatus. Gearing Gearing Gearing Glass blowing machine Glass, Manufacture of S. O. Governor for regulating the	J. A. Herrick R. C. Sayer A. Alfson T. G. Brady B. Barnes L. Grote Richardson, Jr. revolution of a
Gas producer apparatus. Gearing. Gearing. Gearing. Glass blowing machine Glass, Manufacture of S. O. Governor for regulating the shaft (2 pats.) \lambda. Graphophones, Electric bru	J. A. Herrick R. C. Sayer A. Alfson T. G. Brady B. Barnes L. Grote Richardson, Jr. revolution of a N. Hoslet et al. ke for
Gas producer apparatus. Gearing. Gearing. Gearing. Glass blowing machine. Glass Manufacture of S. O. Governor for regulating the shaft (2 pats.)	J. A. Herrick R. C. Sayer A. Alfson T. G. Brady B. Barnes L. Grote Richardson, Jr. revolution of a N. Hoslet et al. ke for J. F. Means J. Kerwin C. F. Cater
Gas producer apparatus. Gearing. Gearing. Gearing. Glass blowing machine. Glass blowing machine. Glass, Manufacture of S. O. Governor for regulating the shaft (2 pats.) Graphophones, Electric brate Grinder, Surface. Gripping device. Gun sight, Telescope.	J. A. Herrick R. C. Sayer A. Alfson T. G. Brady B. Barnes L. Grote Richardson, Jr. revolution of a N. Hoslet et al. ke for J. F. Means J. Kerwin C. F. Cater O. Granheding
Gas producer apparatus. Gearing. Gearing. Gearing. Glass blowing machine. Glass blowing machine. Glass, Manufacture of S. O. Governor for regulating the shaft (2 pats.) Graphophones, Electric brates. Grinder, Surface. Gripping device. Gun sight, Telescope. Guns, Hinge for tilting battair cutter.	J. A. Herrick R. C. Sayer A. Alfson T. G. Brady B. Barnes L. Grote Richardson, Jr. revolution of a N. Hoslet et al. ke for J. F. Means J. Kerwin C. F. Cater O. Granheding Irrel. F. Jager A. R. Fordyce F. C. Wilcox
Gas producer apparatus. Gearing. Gearing. Gearing. Glass blowing machine. Glass blowing machine. Glass, Manufacture of S. O. Governor for regulating the shaft (2 pats.) Graphophones, Electric brate Grinder, Surface. Gripping device. Gun sight, Telescope. Guns, Hinge for tilting by Hair cutter. Hair structure. Hair structure.	J. A. Herrick R. C. Sayer A. Alfson T. G. Brady B. Barnes L. Grote Richardson, Jr. revolution of a ke for J. F. Means J. Kerwin C. F. Cater O. Granheding Irrel. F. Jager A. R. Fordyce F. C. Wilcox I. L. Wolkow E. I. Rock
Gas producer apparatus. Gearing. Gearing. Gearing. Glass blowing machine. Glass blowing machine. Glass, Manufacture of S. O. Governor for regulating the shaft (2 pats.) Graphophones, Electric brates Grinder, Surface. Gripping device. Gun sight, Telescope. Guns ight, Telescope. Guns, Hinge for tilting bathair cutter. Hair cutter. Hair structure. Hair structure. Hame fastener. Hand, Artificial. J. M. S. Hand, Artificial. J. M. S.	J. A. Herrick R. C. Sayer A. Alfson T. G. Brady B. Barnes L. Grote Richardson, Jr. revolution of a N. Hoslet et al. ke for J. F. Means J. Kerwin C. F. Cater O. Granheding Irrel. F. Jager A. R. Fordyce J. L. Wolkow E. L. Bnck hackelford et al.
Gas producer apparatus. Gearing. Gearing. Gearing. Glass blowing machine. Glass, Manufacture of	J. A. Herrick R. C. Sayer A. Alfson T. G. Brady B. Barnes L. Grote Richardson, Jr. revolution of a X. Hoslet et al. ke for J. F. Means J. Kerwin C. F. Cater O. Granheding urel. F. Jager A. R. Fordyce F. C. Wilcox I. L. Wolkow E. L. Bnck hackelford et al. L. Bosley ent C. P. Stevens
Gas producer apparatus. Gearing. Gearing. Gearing. Glass blowing machine. Glass blowing machine. Glass, Manufacture of S. O. Governor for regulating the shaft (2 pats.) Graphophones, Electric brate Grinder, Surface. Gripping device. Gun sight, Telescope. Guns iffinge for tilting be Hair cutter. Hair ornament. Hair structure. Hand. Artificial. J. M. S. Hand wrench. Harrow cultivator attachmed. Harvester, Beet.	J. A. Herrick R. C. Sayer A. Alfson T. G. Brady B. Barnes L. Grote Richardson, Jr. revolution of a N. Hoslet et al. ke for J. F. Means J. Kerwin C. F. Cater O. Granheding Irrel. F. Jager A. R. Fordyce T. C. Wilcox J. L. Wolkow E. L. Bnck hackelford et al. L. Bosley E. C. P. Stevens W. Stinson E. Ashler
Gas producer apparatus. Gearing. Gearing. Gearing. Glass blowing machine. Glass blowing machine. Glass, Manufacture of	J. A. Herrick R. C. Sayer A. Alfson T. G. Brady B. Barnes L. Grote Richardson, Jr. revolution of a N. Hoslet et al. ke for J. F. Means J. Kerwin C. F. Cater O. Granheding urel. F. Jager A. R. Fordyee F. C. Wilcox H. L. Wolkow E. L. Bnck hackelford et al. L. Bosley ent C. P. Stevens W. Stinson E. Ashley E. A. Walz mechanism for
Gas producer apparatus. Gearing. Gearing. Gearing. Glass blowing machine. Glass blowing machine. Glass, Manufacture of S. O. Governor for regulating the shaft (2 pats.) Graphophones, Electric brau Grinder, Surface. Gripping device. Gun sight, Telescope. Gun sight, Telescope. Guns, Hinge for tilting be Hair cutter. Hair ornament. Hair structure. Hair structure. Hand, ArtificialJ. M. S. Hand wrench. Harrow cultivator attachmed articles. Head gate. Head gate. Head protector. Heading machines, Ejecting	J. A. Herrick R. C. Sayer A. Alfson T. G. Brady B. Barnes L. Grote Richardson, Jr. revolution of a N. Hoslet et al. ke for J. F. Means J. Kerwin C. F. Cater O. Granheding irrel F. Jager A. R. Fordyce F. C. Wilcox I. L. Wolkow E. L. Bnck hackelford et al. L. Bosley M. Stinson W. Stinson E. A. Shley E. A. Walz g mechanism for E. W. Dnston J. Micbki et al.
Gearing. Gearing. Gearing. Gearing. Gearing. Glass blowing machine. Glass blowing machine. Glass blowing machine. Glass blowing machine. Glass blowing machine. Glass blowing machine. Glass blowing machine. S. O. Governor for regulating the shaft (2 pats.). A. Graphophones, Electric brate Grinder, Surface. Gripping device. Gun sight, Telescope. Guns, Hinge for tilting bath and the structure. Hair cutter. Hair cutter. Hair ornament. Hair structure. Hame fastener. Hamd, Artificial. Harrow cultivator attachmound the structure of the structure. Head gate. Head protector. Heading machines, Ejecting Headligbt, Dirigible. Heater. High frequency apparatus.	J. A. Herrick R. C. Sayer A. Alfson T. G. Brady B. Barnes L. Grote Richardson, Jr. revolution of a N. Hoslet et al. ke for J. F. Means J. Kerwin C. F. Cater O. Granheding H. J. A. R. Fordyce A. R. Fordyce T. C. Wilcox H. L. Wolkow E. L. Bnck hackelford et al. L. Bosley Ent. C. P. Stevens W. Stinson E. Ashley E. A. Walz g mechanism for E. W. Dnston J. Micbki et al. H. J. Lange W. Dubilier
Fish line attaching device. Fish stringer H. J. Flange joint. Flash light apparatus H. Flax fibers, Preparation of Flexible coupling Fluid pressure brake. Fluid pressure control. Flushing mechanism for wa Flying machine. Flying machine. Flying machine. Flying machine. Forge, Oil burning blacksmi Framing tool. Furnace J. B. & Furnaces. Charging electric. Gas engine R. & Gas producer apparatus. Gearing. Gearing. Gearing. Gearing. Gearing. Gearing. Gearing. Gearing. Gearing. Gearing. Graphophones, Electric brat. Grinder, Surface. Gripping device. Gun sight, Telescope. Guns. Hinge for tilting based and the structure. Hair structure. Hair structure. Hair structure. Hand. Artificial. J. M. & Hand wrench. Harrow cultivator attachmed after. Head protector. Heading machines, Ejecting Headligbt, Dirigible Hinge, Door.	.G. A. Beuhler
Gas producer apparatus. Gearing. Gearing. Gearing. Glass blowing machine. Glass blowing machine. Glass, Manufacture of	A. BeuhlerA. Brandes . A. Hannegan

Hopper, Automatic feeding	
Hose rack	
Hopper, Automatic feeding	
Hub for velocipedes and the like, Coaster W. Blair Hydrant velve W. Ziller Hydranlic press Hydraulic press J. II. Cotton et al. Hydraulic press J. II. T. and V. H. Mills Ice making apparatus J. C. Carpenter Impeller Impeller Implement, Combination Implement, Combination Implement, Combination Internal combustion engine Internal combustion engine Internal combustion engine Internal combustion engine Internal combustion engine Internal combustion engine Internal combustion engine Internal combustion engine Internal combustion engine Internal combustion engine Internal combustion motor. Internal combustion motor. Internal combustion motor. Internal combustion motor. Internal combustion motor. Internal combustion motor. Internal combustion for cooling. Internal and shafts of engines, &c., Composition of matter for cooling.	
Hydranlic pressW. II. Cotton et al.	
Hydraulic pressJ. Stehlin Hydrocarbon burner	
Ice making apparatusO. Frevtag	
Ignition regulatorJ. C. Carpenter	
Implement, CombinationB. E. Totty	
Internal combustion engineII. H. Simou	
Internal combustion engine, Two cycle	
Internal combustion motor	
JackD. F. and D. W. Batterman	
Joint twisting tool. A. Freier Journals and shafts of engines, &c., Composition of matter for cooling. G. M. Callahan Callahan Callahan Kettle, Scamless jacketed. A. M. Erickson Kiln. L. P. Ross Kiln. L. P. Ross Kiln. L. P. Ross Kiln. L. P. Ross Kiln. L. P. Ross Kiln. L. P. Ross Kiln. L. P. Ross Kiln. L. P. Ross Kiln. F. Lehmann Lamp. F. M. Euler Lamp barner. F. Pujol Lamp shifter. I. R. Shockey Lamp stem sealing machine, Incandescent. M. E. Pierson Lamp switches, Means for operating incandescent. J. L. Moore et al. Lamp tester, Miner's safety. F. Benedetti et al. Lamp, Therapeutic. M. W. Newton Lamp, Vapor. E. Seitz Leather, Repairing cracks in patent. Lightning machine. J. Lohse Lightning arrester L. S. Brach Lightning arrester (2 pats.) E. E. F. Creighton Lightning arrester for maltiphase low voltage circnits, Liquid electrode. E. E. F. Creighton Lightning arrested with gap and blow-out, Electrolytic. E. E. F. Creighton Lincrusta, Process and apparatus for manufacturing. R. Holtkott	
sition of matter for cooling	,
Kettle, Scamless jacketedA. M. Erickson	1
Kiln for revivifying char. R. S. Kent	
Ladder support, AdjustableF. Lehmann LampF. M. Euler	
Lamp bnrner	
Lamp stem sealing machine, Incandescent	
Lamp switches, Means for operating incan-	-
Lamp tester, Miner's safety	
Lamp, TherapeuticM. W. Newton	
Lamp, VaporE. Seitz	:
Level and plumb W. Potter	į
Lifting machineJ. Lohse	j
Lighting devices, Snock absorber for	
Lightning arresterL. S. Brach Lightning arresterS. E. Mark	
Lightning arrester (2 pats.)]
Lightning arrester, Electrolytic	
Lightning arrester for multiphase low volt-	j
age circuits, Liquid electrode	
ElectrolyticE. E. F. Creighton	
Lincrusta, Process and apparatus for man- ufacturing	
Liquids, Apparatus for conveying inflam	,
Lincrusta, Process and apparatus for man- ufacturingR. Holtkott Liquids, Apparatus for conveying inflam mableC. Martini Liquor, Apparatus for delivering measured quantities ofD. Griffiths	,
Lock F. Gadecki	
quantities of D. Griffiths Lock F. Gadecki Lock II. G. Voight Lock key II. Alsterberg Locomotive ash pan I. A. Davis Locomotive cabs, &c., Guard or protector for T. J. Qnirk Locomotive track sander R. Kett Loom, Hand G. L. Reed Macaroni manufacturing apparatus. F. Becker	
Locomotive ash pan	
for	
Loom, HandG. L. Reed Macaroni manufacturing apparatus	
Mail bag catcher and deliverer. Mail bag catcher and deliverer. J. N. Papeudry Mail bar and carrier. H. A. Schultz	
Mail bag catcher and denverer. J. N. Papeudry	
Mail crane and catcher	
Mail crane and catcherJ. A. Timmerman Mail holder for letter carriers' use, Portable.	
Enrlich et al.	
Massage apparatusF. Pope Match box case O. N. Hilton et al.	
Marine craft. C. W. Call. Jr. Massage apparatus	
Match safe W. N. Sewell	
Measuring and discharging device, Endud T. H. Madgett	,
Contacting device for electrical	;
Mechanical movementP. Christman	3
Metal or other sheets, Feed mechanism for	3
Meter connectionG. W. McKee	,
Mixing agitatorB. E. Shattuck	3
Moistening and amxing machine, Stamp J. Gillham, Jr.	
GraduatedL. Hurley et al.	3
Mop and brush holder, Combination D. B. Wing	;
Motor or generator brnsh holder	ž
Motor priming apparatusG. W. Brown	
pneumaticL. W. Southgate	
levers of	- 3
Musical notation, Staff and certain key	;
symbols forA. M. Stringfield NecktieI. Lewin	5
Needle packageJ. H. Boye Nest, Hen'sC. E. Dnnlan	
Nipple, Nnrsing bottleG. R. Shepherd Nnt lockW. P. and S. G. Thompson	
Oil burner	\$
Oil burner deflectorL. C. Curtis	5
Ordnance, Recoil brake for K .Voller	
Package binderJ. L. Downer	5
Package, Metallic shippingL. S. Howe Packing stripC. A. A. Freerks	8
Paints, MakingA. S. Ramage Paper fixture, ToiletG. Denoon Ir	5
Paper pulp, MakingB. F. A. Saylor Paper treating mechanism. C. W. Moore	92.02.02.02
Measuring and discharging device, Liquid. Measnring and indicating instruments. Contacting device for electrical. E. Haagn Mechanical movement. P. Christman Metal or other sheets, Feed mechanism for F. Eberhart Meter connection. Meter c	
Pencil sharpenerJ. J. Jones	

Pencils, pens, and the like, Holder for
Pencils, pens, and the like, Holder for B. B. Shook Perforator
Phonograph record cabinetR. C. Kuhu
Photographic printing attachment for gas
Pianos and organs, Transposing keyboard
Photograph machine. P. V. W. Welsh Photographic printing attachment for gas and other burners. H. L. G. Moore Pianos and organs, Transposing keyboard attachment for P. Bialik Picture device, Moving. E. W. Pavis Picture machine, Moving. E. M. Wooden Piling, Metal. E. A. Garratt Pillow support, Adjustable. H. E. Butler Pin gnard. A. T. Pall Pipe box, Service. H. D. Kehr, Sr. Pipe eonpling. M. A. Farrell Pipe flanging machine. R. W. Stock Plastic materials into twisted shapes, Ma- chine for forming. A. Cotoli Pliers. W. W. Avery Pliers, Jeweler's. H. J. McKeon Plow. C. D. Dellinger Plow. W. L. Panl Plow, Motor disk. J. M. Henton Plow, Subsoil. J. M. Brooks
Picture machine, MovingE. M. Wooden
Pillow support, AdjustableH. E. Butler
Pin gnardA. T. Ball
Pipe compling
Plastic materials into twisted shapes, Ma-
chine for forming
Pliers, Jeweler's
Plow W. L. Panl
Plow, Motor diskJ. M. Henton Plow, SubsoilJ. M. Brooks
Plow, Subsoil. J. M. Brooks Plow, Traction G. Boettler Plunger, Clean-out. N. B. Griffith Pneumatic control device. L. F. Goodspeed
Pneumatic control device. L. F. Goodspeed
Proceed book safety attachment
Potato digger
Power pressG. A. Ohl, Jr.
Treservative preparing apparatusJ. T. Hall
Preserving cornB. J. Johnson Press for beet pulp and the like
Printer's blowlet
Printing pressE. Baier
Projectile, C. P. Watson Protective device E. F. Creighton
PumpF. M. Chenoweth et al.
Pump, CentrifugalJ. A. Goodner
Pump controlling switch
Power press. G. A. Ohl, Jr. Preservative preparing apparatus. J. T. Hall Preserving corn B. J. Johnson Press for beet pnlp and the like. G. G. A. F. Decker Printer's blanket. A. F. Decker Printing press. E. Baier Projectile. C. P. Watson Protective device. E. E. F. Creighton Pump. F. M. Chenoweth et al. Pump, Air. D. Klein Pump, Centrifugal. J. A. Goodner Pump coutrolling switch. C. Gamer Pump, Rotary. S. C. Smith Pnmp. Rotary. Moreight Pumps. Working barrel for oil well. D. Daniels et al.
Rail brace and fastener . A. C. Herbert Rail brace and fastener . A. T. Kramer Rail joint . J. N. Papendry Rail joint . S. D. Taylor Rail joint . W. N. R. Copley Rail lubricator . F. S. Freeman et al. Railway crossing . A. Hollinger
Rail brace and fastenerA. T. Kramer
Rail jointJ. N. Papendry Rail jointS. D. Taylor
Rail jointW. N. R. Copley
Railway crossing
Railway rails, Means of securing and sup- porting
Railway signal
Razor strop attaching deviceE. James
Receptacies, Manufacture of Vacuum Wall
Receptacles, Manufacturing hollow wall
Rail joint W. N. R. Copley Rail lubricator F. S. Freeman et al. Railway crossing A. Hollinger Railway rails, Means of securing and supporting W. H. Kirkbride Railway signal S. L. Adler Railway tie J. W. Shipley Razor strop attaching device E. James Receptacles, Manufacture of vacuum wall O. J. W. Higbee Receptacles, Manufacturing hollow wall O. J. W. Higbee Receptacles, Manufacturing hollow wall O. J. W. Higbee Reflector for light rays, Composite (Reissuc) O. A. Mygatt Retainer, Automatic E. M. Swift Riveting C. L. Kinnicott Road smoother and grader W. H. Wilson Rod coupling H. L. Barrickman Rope, Flattened strand O. Tangring Rotary furnace D. Baker Rotary mold for founding tubes and the like H. J. Molinder Rubber balls, Machine for making hollow india F. H. Smith Rule, Plumb H. Platt Safe and vault protector, Combination E. W. West Safety pin L. Falstrem et al. Sand and slime separator S. J. Tennal Sand drier F. J. Hull Sapphire, Synthetic A. V. L. Verneuil Sash bars and die for forming same, Making II. Ritter Sash lock .J. F. M. J. and L. D. Schner
Retainer, Automatic E. M. Swift
Road smoother and graderW. II. Wilson
Rod couplingII. L. Barrickman Rope, Flattened strandO. Tangring
Rotary furnaceD. Baker
likeII. J. Molinder
Rubber balls, Machine for making hollow indiaF. II. Smith
Rule, PlumbII. Platt
E. W. West
Sand and slime separatorS. J. Tennal
Sand drier
Sash bars and die for forming same. Mak-
Sash lock. J. F., M. J. and L. D. Schner
SaucepanM. I. M. Hanlon et al.
Saw, Chain
Saw guide, BandII. Rost
Saw tooth cutting and setting machine
Scale, ComputingJ. N. Perkins
Scale, ComputingC. M. Cameron Seal, CarC. II. Bull
Sash bars and die for forming same, Making II. Ritter Sash lock. J. F., M. J. and L. D. Schner Sash, Metal window E. A. Sanders Saucepan. M. I. M. Hanlon et al. Saw. Chain. D. E.Crouch Saw clamping device. K. J. G. Dahl Saw guide, Band III. Rost Saw tool. D. R. Williams Saw tooth cutting and setting machine E. J. Moore Scale, Computing. J. N. Perkins Scale, Computing. C. M. Cameron Seal, Car. C. II. Bull Seat. A. L. Morton Sewing and embroidering machine R. Cornely
Sewing machine attachment. A. H. DeVoe
Sewing machine attachmentA. II. Devoe Sewing machine darning attachment
Sewing machine threading attachment
Shade Window W Wohl of all
Sheaf loader L. J. Collins
Shingle, Molded
Shoe filling machine
Signalling device, Switch. W. II. Jenkins
Snap O. J. W. Higbee
Snow melting apparatusG. P. Van Wye Sole leveling machine Eppler
Sole pressing machine (2 pats.)
Sewing machine darning attachment D. L. Anthony Sewing machine threading attachment A. Livingston A. Livingston Shade, Window. E. W. Webb et al. Sheaf loader. L. J. Collins Shingle, Molded. N. A. Austin Shoeking machine. L. J. Clement Shoe filling machine. A. Perri Shoemaker's jack. F. O. Rollins Sigualling device. Switch. W. H. Jenkins Skirt marker. A. S. Wegnsen Snap. O. J. W. Higbee Snow melting apparatus. G. P. Van Wye Sole leveling machine. A. Eppler Sole pressing machine (2 pats.). E. N. Preble Sonnd amplifier. A. Hewitt Sound effects for theatrical and like purposes, Apparatus for producing various.
Sound amplifierA. Hewitt
Sound effects for theatrical and like purposes, Apparatus for producing various.
poses, Apparatus for producing various A. H. Moorhouse
bined
Speed indicator
Spark plug holder and priming cup, Combined
Spinning or twisting frames, Adjustable tension for hobbins for T. F. Parkers
Spring seat
oping scat

Spring switch D. D. Samaia Square, Miter F. Jones et al.	Issued October 3, 1911.
Stalk puller. II. Asbell Stall. W. L. Root Stamp affixing machine. J. F. Cummings	MECHANICAL PATENTS.
Stamp, TradingJ. Martin et al. Starting deviceE. N. Ward	Adding machines A. H. a. Adjustable chair A. T. Palmer Advertising device R. Klotz
Steam engine. II. Engebreston Sterilizing and water-heating apparatus, Combined. E. Kronman	Aerocraft, Safety attuchment for
Stocking supporter	Aeronautical deviceM. H. Whalen Aeroplane (2 pats.)C. H. Duncan AeroplaneM. Mihalyh
Storage and vending apparatus, Combined	AeroplaneT. M. Walling AeroplaneR. P. Hall Aeroplanes, Device for keeping afloat
Striper, Double lineII. E. King Studs, Machine for setting snap fastenerA. II. Greenebaum	Airship
Surveyor's combination grip and level A. Rogers Swab	AirshipR. Wankmuller Alnminous compositionE. Taylor AmalgamatorC. F. Davis
Swimmer's applianceW. Enders Switchboard plugO. A. Spencer	Amusement apparatus. D. H. Talbert et al. Amusement apparatus. R. M. Murie Animal trap. T. J. Bnrke
Syriuge	Animal trip
Tack puller, Lasting. J. H. Ricker Tank heater D. M. Dunlap Teat cup. D. Klein et al.	Anticreeper II. II Sponenburg Apron, Scrub E. P. White
Teeth, Backing for artificialR. B. Power Telegraph, PrintingC. L. Krum Telephone systemC. W. McKibben	Arch center
Three high roll millC. L. Taylor	Atomizer or humidifierW. P. Wood et al. Auger bitL. Jennings
Thresher, Stauding grainC. C. Baldwin Threshing machines, Self feeder and band cutter forR and B. Crain	Automatic switch E. F. Bnbb Automobile C. F. Rodin Antomobile brake W. Besler
Tie former and holder, Four-in-handJ. Hulett Tie holder and pressJ. E. Hnghes	Automobile steering mechanism lock
Tile cutting tableM. Mueller Tire, PneumaticJ. C. Barker Tire, ResilientR. A. Falkenberg	Bacterial product (2 pats.)W. Schultz Bag filling machines, Packing-auger for J. F. McLaughlin et al.
Tire valve	Baling apparatusW. B. M. Brooks
Tires, Outer cover of pneumaticJ. C. Barker Tobacco pipe strainerL. H. Westcott	Bearing, Antifriction. C. O. Johnson Bearing, Ball. F. E. Bright Bearing, Springs. F. R. E. Thorn
Tool, Combination. Λ. Martenson Tool, Compound. J. Joss et al. Tool handle, Ratchet. M. Suster	Bearings, Assembling ball. F. E. Bright Bed warmer. J. Hay Bed warmer, Electric. J. Alden
Top, Spinuing	Bedstead
Track, Monorailway W. H. Shepard Traction wheel C. R. Traxler Train controlling and stopping mechanism	Blinds, Swinging and tiltingJ. Fry Blower, RotaryT. W. Green Boiler safety appliance, Steam
Train order or message delivering device.	Boiler tube spreader D. G. Shughart Books, Disinfecting T. H. Hood
Tray	Boring bit
Tronsers creaser. A. Dombrowsky Tubular boiler. J. Van Oosterwyck Tnbular structure. J. II. Brown	Bottle, Insulated
Turn tableH. M. Verplauck Turn tableE. Burr Turning mechanismR. F. Scott	Bottle, Vacuum insnlatedG. P. Van Wye Bottle washing machineJ. M. Felger Bowls, Carrier for washingC. G. Sargent
Tying device for bundling purposes D. B. Williams Typewriter	Boxing, Protector for use in
Typewriter G. W Downing Typewriter inking attachment V. A. Kemper	Brick handling method and pallet
Typewriting machine (2 pats.)	Bridle bit
Typewriting machine G. B. Brand Typographic machine H. Degener Upholstery machine II. L. E. Krueger	Brush holder
Vacuum cleanerL. Van Nette ValveG. A. Webster ValveF. C. Matthews	Button, Cuif. R. C. Robinson Cabinet, Bottle. L. J. Crecelius Cable and similar products, Mechanism for
Valve	making armored. II. R. Gilson Cable, Armoring. H. R. Gilson Cake mixer C. Schenk
Valve, Automatic radiatorA. O'Brien Valve, Engine pressure equalizing	Cau cover lining machineL. C. Sharp Car coupling safety appliance
C. G. Stone Valve, Foot operatedV. D. Renwick, Jr. Valve gear for compound engines, ControllingF. E. Norton	Car feuder, StreetH. M. Godfrey Car roof framework (Reissne)E. Posson
Valve levers, Stop for throttle	Car sign, RailwayC. E. Bonnie Car stop, MineG. W. Jenkins et al. Car supplemental seat, Motor. G. H. Storm Car, TankA. Becker
Valve, Retarded releaseJ. S. Custer Vapor converter and controlling device thereforP. H. Thomas	Cars, Coutroller operated gong for electricJ. E. E. Nash
Vehicle, Explosion engine driven	Carbon, HeatingW. A. Smith Carriers, Retaining device for overheadA. P. Nelson
Vehicle wheelJ. C. Thoen Vehicle wheel, ResilientR. L. Watts et al. Vending machine, PackageW. II, Sigley	Casting perforator. E. A. Hardison Cash-register. E. S. Church Cash register. C. F. Kettering
Vending machine, TicketA. A. Caille Veueer entting machine attachmeut A. E. Baxter	Centrifugal separator for gasesJ. Fetzer ChainJ. M. Jones Chair head rest, Barber'sW. J. Cotter
Voltage regulator. S. B. Storer Wagon jack. W. T. Ellett Wall coping. E. M. Campfield	Channel comenting machine. C. P. Stanton Churn J. W. Roop Cigar machine W. S. Luckett
Wall registerF. Hochn et al. Wall with metallic lathingP. Stolte	ClampA. L. Cobb Closet fixtures, Ventilating apparatus for C. E. Shadall
Walls of tunnels, shafts and the like, Means for building and reinforcing the	Clothes line clamp and regulator
Washing machineS. F. O'Connor Washing machineP. F. Berkey Washing machine, ClothesB. V. Crumrine	Clothes line reel. J. C. Donst Clothes pin bag. II. L. Franke
Water cooler. L. R. Steel Wave motor W. V. Allen Weatherproofing I. H. Athey	Clothes rack
Weight, Dress	Coating, Protective and preservative J. II. Morrell Cocoa, PurifyingL. Greiser
Wheel construction W. II. Green Whistle, Motor driven G. F. Atwood Wiuding machine, Tube C. F. Welsh	Collar supporterA. J. Thomson Composition of matterL. S. Brach Computing and registering mechanism
Window lifting mechanismII. II. Schroyer Wire coating machineG. Gustave	Concrete, Composition for coating molds for
Wire splicing tool. E. Swenson Wood, Vulcanizing C. Howard Wrench A. and W. Bender Wrench C. Bender S. W. Ben	Concrete mixerO. I. Overturf Concrete mixerC. II. Foley
Wrench A. Dudley, Sr. Wrench J. Egan Wrench S. R. Archer	Concrete piling for bnlkheads
Wrench and pliers, Combined. J. H. Brooks Writing machine E. B. Hess	Concrete shingles and the like, Machine for makingT. G. Brawley

Issued October 3, 1911.

Issued October 3, 1911.
MECHANICAL PATENTS.
Adding machines
Aeronautical device. M. H. Whalen Aeroplane (2 pats.) C. H. Duncan Aeroplane. M. Mihalyn Aeroplane. T. M. Walling Aeroplane. R. P. Hall Aeroplanes, Device for keeping affoat.
Airship. R. Wankmuller Alnminous composition. E. Taylor Amalgamator. C. F. Davis Amusement apparatus. D. H. Talbert et al. Amusement apparatus. R. M. Murie Animal trap. T. J. Burke
Annunciator, Electrically operated. F. W. Bost et al. Anticreeper
Armature for electric generators J. Spiltdorf Atomizer or humidifier. W. P. Wood et al. Auger bit
Axle lubricatorG. C. and J. F. Benjamin Bacterial product (2 pats.)W. Schultz Bag filling machines, Packing-auger for J. F. McLaughlin et al.
Baling apparatus J. F. McLaughlin et al. Baling apparatus W. B. M Brooks Baling press G. E. Rouse Bearing, Antifriction C. O. Johnson Bearing, Ball F. E. Bright Bearing, Springs F. R. E. Thorn Bearings, Assembling ball F. E. Bright Bed warmer J. Ilay Bed warmer J. Alden Bed warmer, Electric J. Alden Binding device for loose leaf books J. Griesinger Elinds, Swinging and tilting J. Fry Blower, Rotary T. W. Green Boiler safety appliance, Steam II. Neville Boiler tube spreader D. G. Shughart Books, Disinfecting T. H. Hood
Blinds, Swinging and tiltingJ. Fry Blower, RotaryT. W. Green Boiler safety appliance, Steam
Boring bitW. Potter Bottle filling apparatusW. L. Bodman Bottle, InsulatedL. R. Steel Bottle, Non-refillableC. Savino Bottle, Non-refillableJ. De Rose Bottle, Vacuum insulated. G. P. Van Wye Bottle, washing medianL. W. Felger
Brake shoeC. H. Smith Brick handling method and pallet W. H. Francis
Brickmaking machine markerG. W. Rathfon Bridle bitD. S. Gallatin
Bowls, Carrier for washing C. G. Sargent Boxing, Protector for use in
Car feuder, StreetH. M. Godfrey Car roof framework (Reissne)E. Posson Car sign, RailwayC. E. Bonnie Car stop, MineG. W. Jenkins et al. Car supplemental seat, MotorG. H. Storm Car, TankA. Becker Cars, Coutroller operated gong for electric Cars. L. E. Nash
Carriers, Retaining device for overhead
Carbon, Heating
Clothes line clamp and regulator
Clothes line reel. J. C. Donst Clothes pin bagII. L. Franke Clothes rack . G. W. McGee Clothes rack and drier . A. Buntenbach Clutch mechanism . F. A. Thurston Coating, Protective and preservative
Cocoa, Puritying L. Greiser Collar supporter A. J. Thomson Composition of matter L. S. Brach Computing and registering mechanism. W. A. Burger
Concrete Mixer
Concrete mixer
Concrete spingles and the like Machine for

Concrete railway tieL. C. Mooney	G
Concrete tunnel holding apparatus	G
C. H. Witthoefft Concrete wall molding device R. W. Fnller Condenser	G G
Conveyer	(; (;
Conveyer. A. W. Crawford Conveyer, Bucket. I. Christ	G
Conveyer, BneketI. Christ Conveying apparatus, PneumaticP. Van Berendonck Core barrel ContractibleC. F. Murray	G G
Core barrel, Contractible. C. F. Murray Corset. C. W. Linscott Cotton chopper and scraper. C. G. Williams Cotton opener and feeder. A. Hitchon	G
Cotton opener and feeder	C
Cotton picker. B. C. White Couch, Canopy E. Lehmann Coupling device J. M. Jones Crutch. W. B. Parsons	G
Crutch. W. B. Parsons Crystals, Producing. II. II. Dow	11
Crystals, Producing. H. H. Dow Culvert. J. Gibson Cnrrent motor. J. Hestera Current registering mechanism, Portable total. F. Hedley et al. Cutter heads, Device for spirally twisting blades for C. D. March Cyele attachment, Motor. R. C. Blackman Davenport. C. K. Goldstein Display device, Transmutable. F. C. Newell, Jr.	1.
talF. Hedley et al. Cutter heads, Device for spirally twisting	1 : 1 :
Olades for Cycle attachment, Motor R. C. Blackman Davenport C. K. Goldstein	I I
Display device, Transmutable	I .
Display device, Transmutable Display rack, RotaryA. Vanderveld Door hanger and track for edgewise movable doors, CombinedW. II. Cole Door openerW. C. Miles Door, Sound proofI. Hamlin Doors, Safety mechanism for power-operatedL. S. Doyle Draft-riggingP. Brown Drain rackS. 11. Hubbard	1
Door opener	1
poors, Safety mechanism for power-oper- ated. J. S. Doyle Draft-rigging P. Brown	1: 1 1
Drain rack. S. 11. Hubbard Dredge. C. W. Ballard Dress, Lady's house. M. Alshuler Dress Triphoraphystham M. Weiler	1
Dress, Lady's houseM. Alshuler Dye, TriphenylmethaneM. Weiler Dyestuff, Blue triphenylmethaneW. Weiler	I.
Egg beater and cream whip, Combined G. F. Hess	1 : 1 :
Egg carrier. W. Johnson Electric alarm. P. A. Brown Flootric controller. J. H. Hall	1
Electric controller	l I
Electric controller. W. A. Smith Electric wires, Attachment plug for W. C. Tregoning Electrical cube terminal W. Davis	1:
C W Davis	I
Electrical controllerI G. P. Thomas Electrical distribution system. A. M. Taylor Electrodes for secondary batteries or stor-	1
age cells, Manufacture of	I
age cells, Manufacture of	I J I.
Elevator and loaderW. C. Evans	J J
Embroidering machineA. Russell Engine starter. GasG. Buress	IN IN
Engine starting device, Internal combustion	ì
	I. I. 1.
Escutcheon plateC. B. Bishop Evaporation, Apparatus for multiple-effect vacuumH. H. Dow Exhibitor, ChangeableB. Sucker	1. I. 1.
Explosion engine, Air cooledA. E. Wolcott Express matter, &c., Apparatus for facili-	1 I.
tating the distribution of (2 pats.)	I. 1 1
Explosion engine, Air cooled. A. E. Wolcott Express matter, &e., Apparatus for facilitating the distribution of (2 pats.)	i I
Fat cutting machineF. D. Gearhart	1.
T. Moller Feed, Steam L. J. Black	1
Feed trongh W. Randall Feed water healer for locomotive and other steam boilers I. F. Fitzsimmons	1 1 1
Feeding animals, Automatic device for	1
Fence fabric machine	l I
Fence post	I
Fire cabinet, RotaryW. J. Hayes et al. Fire engine, AntomobileJ. L. Poultney Fire extinguisherT. J. Beetham	7 7
Firearm Lewis Firearm, Air cooled automatic I. N. Lewis	7
Firearm. Air cooled automatic. I. N. Lewis Fireproof box. R. R. Wilder Fish grapple. F. Klinger Fishpole reel. A. R. French Floating structure. G. A. Wieland Floor jack. G. Hubbard Klushing tank F. Korsov	ご ご ご ご
Floating structure G. A. Wieland Floor jack G. Hubbard	Ĵ
Flushing tank. E. Kersey Flushing tank. W. G. Stewart Flying machine. E. P. Vincent Folding chair. H. L. Adzit et al. Form and corset cover, Combined bust.	7 7
Folding chair	_
Forming machine. J. F. Costa Forming press. A. N. Verdin et al. Fountain comb. G. M. Charles	7
Fountain comb. G. M. Charles Fruit gatherer C. Hennessee Furnace-cover attachment D. R. Steele	Ž
Furnace-cover attachment D. R. Steele Furnace rgulator L. P. Beech Fuse, Refillable . F. H. Kaiser et al. Game apparatus W. N. Taylor	7.
Game apparatus. W. N. Taylor Game apparatus. J. E. Yost Garment	1
Carment Hy))))
Gas eut off apparatus. L. C. Flaceus Gas eut off apparatus C. G. Keeton Gas genevator Acadylana C. A. Page	
Gas eut off apparatus	7
Gas pnrifying apparatus, Acetylene	3

THE INVE	
Gas regulatorF. M. Brooks Gas tube tipA. W. Nicholls Gear mechanism, Power transmitting E. A. Johnston et al.	7
Genring	
Gearing O. E. Hild Gearing III G. Carr Gearing Lubricating system J. A. Filsinger Gearing Transmission R. C. Townsend	
Gearing, Transmission. R. C. Townsend Glove and mitten. L. L. Tabou Grain elevator. T. C. Lorenzen Grease lubricator. J. C. Ross Greenhouse, Miniature. F. W. Schwarz	
Greenhouse, MiniatureF. W. Schwarz Gum, Manufacture of chewing	
Gum, Manufacture of chewing. J. D. Darling Gum or other fluid or semi fluid materials. Apparatus for applyingF. M. Furber Gun barrel and analogous object.	
Gun cleaner	: I : I : I
Hacksaw, Portable. Le S. Bradford, Jr., et al. Hacksaw, Power. E. S. Bradford, Jr., et al. Hair drying device. F. E. Hawker Hame affachment. J. H. Davis	. I
Hair drying device. F. E. Hawkes Hame attachment. J. H. Davis Harvester reel support. J. A. Stone	
Hame attachmentI. Days Harvester reel supportI. A. Stone Harvester seatI. W. Pridmore Harvesting machineI. A. Beckett Hat brim wiring machineA. Hawortl Hat markE. C. Boggs Hat pin fastener and point protector Lat Pin protector	i I
Hat markE. C. Boggs Hat pin fastener and point protector	s I
Hat Pin protector	I
Headlight, AutomobileJ. H. Adams Headlight controllerA. Janishefsk	: <u>1</u> i 1
Headlight or other light projector	. 1
Ileadlights, Optical system for	
Hear insulated receptacle. L. J. Ulmen Heel building machine. W. Wolfe Heel fastener. F. A. Nolar Heel plate. F. M. Heatl Hinge, Storm window. R. H. Phillipps Hose appliance. R. M. Dixon Hub attaching device. J. D. Robertson Ice cream tubs, Lid for. J. W. McKinney Lee making apparatus. Artificial	. I
Hinge, Storm window. B. H. Phillipps flose appliance. R. M. Dixor	1 I 3 I 1 I
Hub attaching deviceJ. D. Robertson lee eream tubs, Lid forJ. W. McKinney Ice making apparatus, Artificial	1 <u>1</u>
lee cream tubs, Lid for J. W. McKinney Lee making apparatus, Artificial O. H. Jewel Igniter	
Internal combustion engine	.]
Internal combustion engine. R. Schoeck Internal combustion engine. W. M. Appleton Internal combustion engine. O. L. Borner Iron silicon ingot. F. A. Byrnes Ironing machine. A. R. Gustafson Jar opener. F. W. Bettis Jewelry case. I. L. Baugl Joint binder. E. C. Glardor Junction box. J. Wares et al Kettle (Reissue). R. B. Lewis Key lock. Changeable. W. Ree	. 1 :]
Jar opener	:] 1
Junction boxI. Wares et al Kettle (Reissue)R. B. Lewis Key lock, ChangeableW. Rees	:] : I
Kettle (Reissue) R. B. Lewis Key lock, Changeable W. W. Ree Knife polishing machine, W. J. Courtney Nnife, switch, Two-slep, W. Muirhead, Jr. Ladder attachment, Step E. J. Bertke Ladder, Folding W. E. Knollenberg Lamp M. Gawel Land roller J. Wissley Lantern L. C. Ebrite Lasting machine E. L. Keye Latch strike-plate, Spring H. G. Voigh Lawn sprinkling system L. D. Barney Legging L. Pfonts	: I
Ladder, FoldingW. E. Knollenberg LampM. Gawel	
Lantern L. C. Ebrito Lasting machine E. L. Keyes	s I
Lawn sprinkling system. L. D. Barney Legging. L. Pfout Lever mechanism, Adjusting. A. Baseman	(1 ;]
Lift jack for antomobilesl. H. Burkholde Lightning aggregater of D. Hilliard Jr. et al	t]
Lightning rod cableE. H. Parket	ī.
Liquid lifting apparatusO. II. and A. L. Elie	. i
Liquid gravity separation of solids F. I. Du Pon Liquid lifting apparatus O. H. and A. L. Elie Liquids or gasses, Apparatus for controll ing the flow of	k
Lock casing E. W. Bassick et a Locomotive exhaust nozzle	1 1
and smoke-consumer for W. E. Coone	
Loom beam. F. Mossber Loom shuttles, Antomatic refilling devic for	е .
Magneto guardD. F. Ebber Mail box alarmG. II. Dieme	t r :
Manure loader	S
Match box. J. S. Gate Mattress. J. P. Cohner Mongaring device for cutting gargents	s n
Mechanical movement	n V
Massage implement. A. A. Grine Match box. J. S. Gate Mattress. J. P. Cohner Measuring device for cutting garments C. Ryan Mechanical movement. H. C. Shav Metal spinning machine D. P. Fitzgerale Metal tubes, Apparatus for the manufactur or production of weldless or seamless C. F. Williams et al Metals, Process of and apparatus for mak ing cladl. F. Monno Metallic tie and rail fastener.	e .
Metals, Process of and apparatus for making clad F. Monno	t
E H McAlliste	1°
Metallic tic and rail fastener. J. Crisk Meters, Dirt collector for proportional Milk can N. Sherman	
Milk can N. Sherman Miter jack and vise, Universal adjustable. A. Shir Noisteney I. O'Rivie	C
Moistener. J. O'Brien Mold. F. M. Sawye Molding machine (2 pais.) J. T. Stone	l* V
Monorali construction, Elevated	y
Mop wringer	r n

Gas regulatorF. M. Brooks Gas tube tipA. W. Nicholls	Music-recording and automatic playing device for organs and like instruments
Gear mechanism, Power transmitting E. A. Johnston et al. GearingF. Hess	Musical instrument, StringedF. Riga Nail pullerG. A. Barnes
GearingO. E. Hild GearingII. G. Carr	Neck tie supportF. M. Wadsworth Nest, TrapS. L. Smith Nut loekJ. W. Wingett
Gearing lubricating system. J. A. Filsinger Gearing, Transmission. R. C. Townsend Glove and mitten L. L. Tabor	Nut lock. J. M. Jones Nutcracking device. H. C. White
Grain elevatorT. C. Lorenzen Grease IubricatorJ. C. Ross Greenhouse, MiniatureF. W. Schwarz	Oil burner A. F. Smardon Oil burner, Crude W. B. Johnston Oils, Apparatns for treating hydrocarbon
Gum, Manufacture of chewing	Ordnance, Minimizing erosion in and pre-
Gum or other fluid or semi fluid materials, Apparatus for applyingF. M. Furber Gun barrel and analogous object	venting flareback in
Gun cleaner	Paper vessel
Hacksaw, PortableE. S. Bradford, Jr., et al.	Pavement, Machine for chopping up asphalt or likeC. E. Bathrick
Hacksaw, PowerE. S. Bradford, Jr., et al. Thir drying deviceE. E. Hawkes	Pencil sharpener
Harvester reel support	PhonographJ. H. J. Haines
Harvester seat	Photographic plates and films for different temperatures, Determining relative times of development of
Hat markE. C. Boggs Hat pin fastener and point protector A. Arandarezyk	Photographic Printing deviceC. O. Miller PinF. B. Rhodes Pipe coupling, AntomaticF. G. Wiliamson
Hat Pin protectorC. A. Sentz- Hat pin, SafetyC. T. Pally	Pipe wrenchW. H. J. Fitzgerald Pipe wrenchW. b. Bessolo
Hay rakes, Fore carriage forC. Pearson Headlight, AutomobileJ. II, Adams Headlight controllerA, Janishefski	Piston ring
Headlight, DirigibleG. J. Baker Headlight or other light projector W. Churchill	Planing machine attachmentC. E. Berold Planing machine milling attachmentC. E. Berold
Headlights, Optical system for	Plank, FlexibleA. Ek
Heat insulated receptacle,L. J. Ulmer Heel building machine,W. Wolfe Heel fastener,F. A. Nolan	Planter S. H. Tinsman Planter and fertilizer distributer, Combiner seed W. D. Lemons
Heel plateF. M. Heath Hinge, Storm windowB. H. Phillipps Hose applianceR. M. Dixon	Planter, Corn
Hub attaching deviceJ. D. Robertson lee cream tubs, Lid forJ. W. McKinney	Pocket, GarmentW. S. Barker Poke, CattleC. F. Schepmann
Ice making apparatus, Artificial O. H. Jewell Igniter	Post card. P. Hansel Press. II. H. Eaton Pressing machine O. Schrom
Initiation apparatusE. De Moulin Insulating spacerL. P. Dickey Internal combustion engineR. G. Gaskill	Printer's ruling formL. Quellmalz Printing press inking apparatus
Internal combustion engineR. Schoeck	Program holderJ. N. Martin Propulsion, Drum for marineL. Dion
Internal combustion engine	Pulley, Clutch
frouing machineA. R. Gustafson Jar openerF. W. Bettis	Pump governor, ElectricW. V. Turner
Jewelry case J. L. Baugh Joint binder E. C. Glardon Junction box J. Wares et al.	Pump lubricator, AirM. Carle et al. Pump, Turbine driven centrifugal W. Scheurmann
Kettle (Reissue)R. B. Lewis Key lock, ChangeableW. Rees Knife polishing machine. W. J. Courtney	Puzzle or toyW. J. P. Olsen RadiatorH. C. Harrison Radiators, Adjustable foot rest or shelf for.
Knife polishing machine. W. J. Courtney Nnife, switch, Two-step. W. Muirhead, Jr. Ladder attachment, Step E. J. Bertke	Radiators and registers, Extensible foot
Ladder, Folding.W. E. KnollenbergLamp.M. GawellLand roller.J. Wissler	rest for
Lantern	Rail brace I. Smith Rail joint S. Tice Rail stay P. H. Truman
Lawn sprinkling systemL. D. Barney LeggingL. Pfonts Lever mechanism, AdjustingA. Baseman	Rail stay. P. H. Truman Railway bed and means for securing rails thereon. A. T. Barry Railway cross tic. J. M. Lively
Lift jack for automobiles J. H. Burkholder Lightning arrester J. D. Hilliard Jr., et al.	Railway safety deviceC. B. Mitchell Railway switch, Automatic
Lightning rod cableE. H. Parker Liquid gravity separation of solids F. I. Du Pont	Railway tie
Liquid lifting apparatusO. H. and A. L. Eliel	Ramie, Producing a cotton substitute from. P. Birkenstock Refrigerator drain
Liquids or gasses, Apparatus for controlling the flow of	Regenerator
Lock	Resilient wheelV. Gil-Delado y Olazabal Resistance furnaceW. D. Coolidge
Locomotive smoke boxes, Adjustable cleaner and smoke-consumer for. W. E. Cooney	Reversing mechanism
Loom shuttles, Antomatic refilling device	Road bed equipmentJ. D. Kneedler Rock crusherJ. M. Landrum
for	Rolling mill
Mail box alarmG. H. DiemerManure loaderA. O. AaslandMarking toolJ. A. Wiekes	Saddle, HarnessA. J. Simmons Sausage linking machineJ. A. Lidback Sawmill carriages, Power set works for
Massage implementA. A. Griner Match boxJ. S. Gates	Sayophone
Mattress. J. P. Cohnen Measuring device for cutting garments C. Ryan	Scaffold, Hanging C. M. Haynes Scaffold, Window L. L. Raymer Scarf-pin R. C. Robinson
Mechanical movement	Seal lock
or production of weldless or seamless C. F. Williams et al.	for gathering fallen-outW. Schick Shade and curtain support, Window
Metals, Process of and apparatus for making cladl. F. Monnot Metallic tie and rail fastener	J. R. Harbaugh Shaft collar II. T. Hallowell Sharpener, Disk M. Quiry
Metallic tie and rail fastenerJ. Crisko Meters, Dirt collector for proportional	Sharpener, Lawn mower
Milk can	Shock tying device
Miter jack and vise, Universal adjustable	Shuttle
MoldF. M. Sawyer Molding machine (2 pats.)J. T. Stoney Monorail construction, Elevated	Sign, Illuminated H. Mnlholland et al. Sign, Illuminated (2 pats.) L. H. Moise
Monoral Construction, Elevated II. II. Ellzey Mop holder and wringer, Combined	Signaling device, SelectiveE. R. Gill Signaling system for mines. E. M. Johnson Signaling system, SelectiveE. R. Gill.
	Silver bullion, Refining N. Neilly Sink bracket M. H. Smith Skylight construction J. D. Thompson
Mower attachment, LawnA. J. Tulane	Sleigh attachmentJ. E. Baldwin

Slugging machine
Soldering apparatus. W. W. Farnsworth Soldering device. L. P. Smith et al. Solenoid with shunt. A. C. Eastwood
Solve on Additional Support A. L. Soper Spoon, Fruit
Slugging machine
Stay bolt. G. S. Thompson Steam boiler C. W. Todd Steam generator D. Stark et al. Steel, Apparatus for the manufacture of.
Steel, Apparatus for the manufacture of, G. J. Stock Stirrup, Safety
Sugar driers, Centrifugal attachment for . J. C. Chaix et al. Supporting guide A. E. Miller
Tapping device, Liquor, J. F. Ferry Target, Self-registering M. S. Ellis Tea kettle handle A. R. Pritchard et al. Telegraph, signal, and telephone system,
Switch stand. J. B. Strong TachometerM. Hoeft Tapping device, Liquor. J. F. Ferry Target, Self-registering. M. S. Ellis Tea kettle handle. A. R. Pritchard et al. Telegraph, signal, and telephone system, Combined. W. A. Froeckman Telephone instrument. P. B. Clarke Tempering machine, Time. J. Retallack Textile fabrie, Reinforced. Z. S. Blackadar Tie and rail fastening. W. G. Lucas Tin scrap, Detinning. K. Goldsehmidt et al. Tire. D. Nelson
Tin scrap, Detinning. K. Goldsehmidt et al. Tire D. Nelson Tire
Tin scrap, Detinning. K. Goldschmidt et al. Tire
Tire, Vehicle
Tobacco caser J. C. Brann Tobacco pipe, Sanitary S. G. Penney Tobacco smoking pipe S. E. Creasey Toilet, Sanitary M. B. Rosenstock Tonsorial apparatus W. J. Citron Tool box and gas tank holder, Combination. J. G. Perrin
Tool box and gas tank holder, Combination. J. G. Perrin Tool holder or clipE. Hamerly Tooth pin anchors, Machine for making J. Dimelow Toothpicks or articles of similar splint- like form, Server forL. H. Tangen
Toothpicks or articles of similar splint- like form, Server for L. II. Tangen Top E. W. Gibbs
Top, Humming. S. Plaut Torpedoes, Percussion mechanism of auto- mobile. A. E. Jones Toy. F. W. Preyer Toy fan. A. Newbold Train stopping mechanism, Electrically con-
Train stopping mechanism, Electrically controlled. C. J. Hurley Transmission mechanism. J. Becker Transom pivot. P. G. Emery
Train stolping mechanism, Electricity controlled
Truck, Automatie
Turn table and winch, Combination truck, H. Zering Turning machine F. W. Potter Tweezers F. Gundorph
Turn table and winch, Combination Truck. HI. Zering HI. Zering Turning machine. F. W. Potter Tweezers. F. Gundorph Twine holder. F. E. Clark Type assembling device. J. Steel Vacuum cleaner. W. J. Ackley Vacuum cleaner. C. A. Dillon
Vacuum eleaner
Valve, Cheek. Johnson Valve, device, Thermostatic. E. W. Comfort Valve, Flushing. G. O. Hilton Valve, Flushing. J. S. Judell Valve, Clobe. S. A. Dennis
Valve mechanismW. J. Morgan Valve, whistle, and safety alarm valve, Combined muffler cut-outJ. G. Weaver Vehiele, MotorS. and A. E. Phillips
Valve, Flushing. G. O. Hilton Valve, Flushing. J. S. Judell Valve, Globe. S. A. Dennis Valve meehanism. W. J. Morgan Valve, whistle, and safety alarm valve, Combined muffler eut-out. J. G. Weaver Vehiele, Motor. S. and A. E. Phillips Vehicle wheel. L. C. Smoot Vehicle wheel. L. C. Smoot Vehicle wheel. E. L. Regnin Vehicles, Current collector for electrically- propelled. W. Kohler Vending machine. J. H. Walter Vending machines, Delivery mechanism for newspapers. C. A. Dawes Voltage regulator, Antomatic. Volting machine. S. L. McLaurin Vulcanizing. J. R. Gammeter Vulcanizing apparatus. J. R. Gammeter Vulcanizing press. M. P. Fellingham Walls construction. F. M. Sawyer Walls and cailings of buildings Structural
propelled. W. Kohler Vending machine. J. H. Walter Vending machines, Delivery mechanism for newspapers. C. A. Dawes
Voltage regulator, Antomatic. G. D'Enstachio et al. Volting machine. S. L. McLaurin Vulcanizing. J. R. Gammeter
Vulcanizing apparatus
frame for the support of the lath and
Washing machine. J. B. Givens Washing machines, Automatic controlling means for. G. Wilson Watch key. J. H. Dnnaway Water cooler. L. R. Steel Water heater, Solar. R. S. McIntyre
Water cooler
detection

Weather strip	Car roofJ. J. McCarthy Car step registerR. W. and L. R. Balch
Wells, Mechanism for elevating torpedoes into mouths of H. Broadwater	Car wheels, &c., MakingS. S. Knight
WheelS. P. Johnson WheelT. S. Chesnutt Wheel mask and attachment, Toothed	Cars. Lamp dimming device for motor W. A. Greenlaw
T. F. Broadfield	Cars, Street indicator forF. M. Stanley CarbureterB. N. Pierce CarbureterA. Weilaud
Wind shieldJ. Cogil Window constructionF. L. Molby Window fastenerC. W. Leinen et al	Carpet cleaner, Compressed aid E. E. Overholt
Window frame, MetalW. D. Forsyth Window Pivoted slidingM. Haberle	Carriage fittingA. W. Smith
Window screen	Cart
and copper	Cash registerJ. L. Morris et al.
Wire rack L. B. Williams Wire stretcher (2 pats.) J. C. Barelay Wrench W. H. J. Fitzgerald Wrench F. B. Rabagliati	Cash register. C. F. Kettering Cash register. E. S. Church Casket, Burial. G. H. Hollister
Wrench F. B. Rabagnari Wrench W. B. Millner et al. Wrench E. Molencki	Cattle guardF. Spencer Cemeut lined pipe and fitting. G. W. Priest Chain Rocket
Wringers, Means for operating washing machine	Chain, BneketE. A. Murray ChairW. D. Schmits et al. Chair leg supporterW. M. Craig
Writing machineE. B. Hess	Christmas tree holderA. Schwaderer ChurnH. L. Edwards et al.
Issued October 10, 1911.	Circuit breaker, AutomaticE. C. Raney et al. Circuit interrupterC. Aalborg
MECHANICAL PATENTS.	Clamp A. E. Palmer Clamp H. Brotherhood
Acetyl cellulose sheetC. Mijnssen Acid concentrating apparatus. E. B. Gray	Clevis J. O. Goss Clock, Alarm M. I. Guertin Clethes line and mount go count.
Adding and recording machine	Clothes line and merry-go-round, RevolvingJ. A. Carroll Coating composition, WoodC. Ellis
Addressing machine, Hand. G. A. Transue	Cock, Four-way. R. Jacobsen Coffee-chaff separator. F. F. Wear Coffin-lid support. H. J. Schmitt
Adjustable bracketA. Vanderveld Aeronantical safety suit or garment A. W. De Meir	Coller head
Aeroplane. O. T. Belcher Aeroplanc. C. Hartmann	Concrete-block making machine
Aeroplane and parachute, Combined W. A. Crawford-Frost	Concrete formI. W. McCallnm Concrete mixerII. Pocock Concrete railway tieL. N. Bncll et al.
Aeroplane safety deviceH. W. Mattoni Agitator implementF. J. Osius Air compressorS. B., C. E. and W. R. Hill	Concrete railway tie. L. N. Bicli et al. Conduit, Flexible. H. H. Balliett Contact-finger E. E. Rose
Air craft, Wind shield and prow for W. I. Wood	Controller
Airship	Conveyer, Portable N. Magnuson P. L. Wooster
Alhuminate, Producing acidE. Nussbaum Alfalfa feedF. M. Wilson et al. Ammonia concentratorW. H. Wright	Conveyer, Three-track spiral gravityG. II. C. Williams CookerH. M. Sheer
Ammonia cylinder, Means for packing J. D. Campbell	Cooker, firelessA. T. Hill Cooking applianceA. L. Sykes
Animal trap. L. A. Steffens Antenna. R. H. Randahl Apparel, Bow for C. S. Clinch	Cork cutting machine A. Gold Corset fitting device C. C. Vosburgh Catton chapper
Apron support, StormJ. B. Chandler Article holderJ. J. Walter	Cotton chopper
Asbestos cement slabs and the like, apparatus for makingF. Hloch	Crimping mechanismF. H. Nullmeyer
Automobile jackJ. B. Foster Automobiles, Elevated snpport for B. Johnson	Croce-tie
Axle and skeinJ. R. Little Bag frameB. yom Eigen	Cultivator stalk cutting attachment, Disk.,
Baling press	Culvert, MetalJ. A. Sanders Current motor, Hinged floating J. II. Pepper
Bars, Heating and rollingW. M. Theobald Barge	Curtain rod. ExtensionC. F. Laun Curtain supporter, Side H. T. and C. T. Sonderup
Barker, BandedI. Richards Basin, CatchF. L. Union Battery connectorJ. II. Gugler	Cuspidor J. Goslinski Cut-out H. W. Doughty et al.
Bearing, Elastic wheelG. Renuerfelt Bearing for centrifugal machines	Cycle and motor of atmospheric type, ExplosionJ. A. Babin
Bed, ApartmentL. E. Frye Bed spring supportM. S. Swanstrom	Dampener, Seam
Belt shifterE. Helm BinderG. Mackay	Disiufecting apparatusW. Schwarzhaupt
Binder, Loose leafH. J. Wiegand Binder, Loose leaf (2 pats.)E. H. Elder Binding, Loose leafH. W. Knautz	Dispensing apparatusC. O. Dietsch et al. Dispensing apparatusL. K. Laurison Display case for salesmen
Binding post	Display device W. W. McKnight
Boat and like vessel. F. Dillon Boat, Life. E. J. J. Leblond	Divinyl, Producing F. Hofmann et al. Door, Grain O. Carlson Door hanger J. F. Murphy
Boiler	Dough mixing machineC. Chambers, Jr. Dough molding machineT. Masel
Boilers, System of washing and filling loco- motiveW. White BoltC. and G. Mathisen	Drawer, Coin
Boot and shoe, VeutilatedG. Valiant Boring, drilling and the like, Machine for.	Drill tap and die-holder, Safety. C. Bardon Brilling machine K. L. J. Frazer Drinking fountain, PoultryW. A. Sextou
Bottle carrier C. A. Langguth	Dye, Orange woolR. Kothe et al. Dye, Vat (2 pats.)W. Bauer et al.
Bottle holder	Egg detector. W. H. Hutchinson Ejector. F. J. O'Leary Elastic wheel for motor vehicles
Box openerH. Simmons Braiding machineF. W. Plumb	Electric conduits, Terminal connector or
Brake blockL. Sanguinetti Brake control, ElectrodynamicJ. D. Ihlder Bucket, Bottom dumping hoisting	coupling for
Bucket for transporting plastic material.	testing E. M. Wilkins Electric switch A. A. Ziegler
Bucket handle C. L. Bartlett Buckle T. J. King Buckle F. W. King	Electrical protector, ThermalC. A. Rolfe Electrodes for the electrolytic refining of metals, Arrangement ofF. M. Kohler
Buckle for top hame straps, Bridge	Electrolytic apparatusW. B. Thorpe Electrolytic deviceW. B. Thorpe
Buckle, HarnessN. Signorelli Building construction, MonolithicF. F. Sinks	Electromagnetic switch, Alternating current
Burdle loader	Electromechanical indicatorP. F. McAvinney
Butter tub, SanitaryB. R. Kinney Button machine feed, Automatic E. Morgan et al.	Elevator stop device, PlungerL. Atwood
Cable duplex systemI. Kitsee Calculating deviceR. F. Koster	Elevators. Speed regulator and stop- mo- tion device for plungerF. C. Furlow Embroidering machines, Jacquard pattern
Calculating machines, Transfer mechanism for the forward and backward counting	gear for J. J. Knecht Engine A. R. Adams
device of	Engine driving wheel, TractionJ. Brey Engine speed regulator, GasA. H. Thomas Engine starting and reversing mechanism.
Car	Multicylinder internal combustion H. T. Burns
g-am acortinition (11. ITC)	Engine starting apparatusE. A. Halbleib

Engine starting crank, Key actuating
Engine starting crank, Key actuating. J. C. Armbruste Engines, Air purifying device for internal combustion
Engines, Valve trip gear for steam and other motive power E. Nnekomm
Evaporating apparatus
Excavator cutter J. S. Henderson
Exercising deviceA. B. Saudberg Exploding mine charges, Apparatus forJ. Krannichfeldt
Explosive. J. G. Nathurst Eyeglass washer, Thbular N. M. Baker
Explosive. J. G. Nathurst Eyeglass washer, Thbular N. M. Baker Eyeglasses N. M. Baker Eyeglasses. Multifocal lens for (Reissue) A. J. Bowers
Eyelet manufacturing machine
Fabric packageG. H. Sibley Fabrics within a frame, Device for securing
Fan J. G. Parkerson, Jr. Fan
Fastening device, Spring J. Schade, Jr. Faucet J. M. Travis
Feed rack
Feed water regulator, Boiler
Eyelet manufacturing machine 1. P. Eisenbeis Fabric package G. H. Sibley Fabrics within a frame, Device for securing the edge of L. Carlson Fan. J. G. Parkerson, Jr. Fan, Oscillating E. E. Hollander et al. Fastening device, Spring J. Schade, Jr. Faucet L. C. Losinger Feed water regulator and alarm, Combined. L. C. Losinger Feed water regulator, Boller C. M. Clarke et al. Fence fabric, Wire Fertilizer distributing apparatus.
Fertilizer distributer. E. M. Bickerstaff Fertilizer distributing apparatus
File, Account W. Barr, Jr. File, Bill W. Molenaar
Filing case
Fireproof window constructionE. H. Lunken
Fish turner. E. L. and C. H. Bond Fishing reel. P. Catneci
Flat iron waxer
Flics or other insects, Device for catching J. B. Luckett
J. B. Luckett Fly trap J. Fritsch Flying boat C. R. Mitchell Flying machine C. F. Kohlruss Flying machine C. F. Wohruss
Flying machine. C. F. Komruss Flying machine. S. Weber Flue sheet. J. Workman
Fluid heater L. D. Lovekin Fluid heater and cooler L. D. Lovekin
Foods, Making or mixing stock
Fountain comb. G. M. Charles Fruit picker. J. C. Ross
Fuel heaterM. J. Wohl et al. Furnace for drying saud and crushed stone.
Fountain comb. G. M. Charles Fruit pickev. J. C. Ross Fuel heatev. M. J. Wohl et al. Furnace for drying saud and crushed stone. W. D. Craven, Jr. Furnaces, Twyer-sight for blast. Furnaces, Twyer-sight for blast. J. V. Symons Fuse. A. F. Danm Fuse adjusting key F. Ziegenfuss Game apparatus. J. G. Bjorkman Game boavd. F. M. Burrowes Garbage crematory. R. E. Nye Garment supporter clasps, Loop for. C. W. Stimson Garment, Uuion. H. S. Cooper Gas burner tip. J. R. Leeming Gas generators, Water seal for Gas producer apparatus. J. A. Herrick Gathering implement. C. Lovett
Fuse adjusting key A. F. Ziegenfuss
Game board F. M. Burrowes Garbage crematory R. E. Nye
Garment supporter clasps, Loop for
Gas burner tipJ. R. Leeming Gas generators. Water seal for
Gas producer apparatus J. A. Herrick
Gaunering implement Lovett Gearing, Violdable L. Gaddie Gem. Imitation F. J. Lightbody
Gilding, Machine for removing waste R. J. Cooper, Jr., et al.
Gas producer apparatus. J. A. Herrick Gathering implementC. Lovett Gearing, Yieldable. L. Gaddie Gem, ImitationF. J. Lightbody Gilding, Machine for removing wasteR. J. Cooper, Ir., et al. Glass cutterR. Friebertshauser Glass paving block for the construction of luminous floors or reinforced concrete.
H. J. Crochet Glove. C. H. Leavengood
Glove-finger tip and seam protecting device. R. N. Carson Glove-seam protecting device. R. N. Carson
Glass paving block for the construction of luminous floors or reinforced concrete
Grasses for packing pads and upholstery purposes, Mechanism for curing and pre-
purposes, Mechanism for curing and preparing. C. A. Anderson Grip device, Intermittent. H. W. Fellows Gripping, fastening, or locking purposes, Device for. D. P. Jones Guiding device, Automatic. W. C. Stephens Gun, Gas operated machine. S. N. McClean Hand shears. S. T. Shirt Harness supporting hook. J. Howard Harp. M. A. Clark Hat pin protector. G. W. Burnett Hat stay. J. M. Bowet Hat stay. J. M. Bowet Hatch construction. W. A. Green Hay loader. H. Eilers Head stock or chuck. H. J. Iljorth Heat distributing system. L. L. Knox et al. Heating apparatus. II. L. Cole Heating buildings by hot water. Apparatus for. F. Walter
Device for D. P. Jones Guiding device, Automatic . W. C. Stephens Cup. Cost operated machine . S. V. McClean
Hand shears
HarpM. A. Clark Hat H. Bendel
Hat stay J. M. Bower Hatch construction W. A. Green
Hay loader H. Eilers Head stock or chuck H. J. Iljorth
Heating apparatus
for F. Walter Heating device and constructing the same. Electric H. B. Taylor
Electric
Heel seat rough-rounder, Automatic
Hoe. J. W. Carlock Hook. J. R. Sherrod Horse releaser. H. W. Floyd
Horse releaser. H. W. Floyd Horseshoe calk. R. D. Sterling Humidifier. J. T. Lockhart Hydrocarbon burner. F. H. Lehman Hydrocarbon burner. J. C. Kurtz et al.
Hydrocarbon burner. F. H. Lehman Hydrocarbon burner. J. C. Kurtz et al.
Hygrometer
ClassifyingL. E. F. David

Music leaf turner. J. Diethelm
Music leaf turner. A. Johnsen
Music punch, Roll. J. C. Lease
Musical instrument, Pneumatic shifting device for movable members of an automatic. M. Clark
Musical instruments and players. Controlling device for automatic. E. G. Clark
Nail-assorting machine. J. H. Pope
Newspaper holder. G. Verges
Nursery chair, Folding. F. A. Mowers
Nut, Lock. J. G. Wolfe
Nuteracking Device. K. Chmurowicz
Oil from oleaginous material. Apparatus for
extracting. J. E. Mills
Oven, Baking. J. Miller, Jr.
Oyster-dipper. E. F. Hulbert
Package depository, Self locking.
G. ValentineG. Valentine Pail. Covered milk......J. E. Brown

Dail filter and studies Combination will-	Sl
Paper holder and cutter, Toilet	Si
Paper trimming machines, Cutting block for.	Si
Paper tubes and the like, Machine for curing laminated	S
Pen filler, FonntainR. W. Whitney Pencil sharpenerJ. D. Schmidt	S
Photography, Manufacture of screens for use in colorL. D. Dn Hauron et al.	S
Piles, apparatus for sinking tubular	81
Pile sinking apparatns. A. B. Clark Piling, Steel sheet. C. C. Conkling Pipe conpling, Detachable F. M. Case Pipe joint. H. Broussean Pipe joint, Locking C. H. Bicalky Pistol stock. F. J. Kaldenberg Planter, Corn. S. K. Dennis Planter, Point C. F. W. Kitchen	S
Pipe conpling, DetachableF. M. Case Pipe jointH. Broussean	p: S
Pipe joint, LockingC. H. Bicalky Pistol stockF. J. Kaldenberg	S
Planter, Potato E. W. Kitchen	2.7.2.
Planter, Potato. E. W. Kitchen Plastic masses, Tool for working and fin- ishing. J. N. Heltzel Pliers. W. H. Metzger Plow. H. C. Parham	S
Plow H. C. Parham Plow W. Baum	
Dlane fandou H 12 V911	888
Plow harrow attachment	8 8
Plowshare P. McDermott	S
Plowshare	888
Press Press	
Pool table pocket	22.22
Power transmission deviceH. L. Phelps	S
Press. A. Bates Press. F. P. Reuneburg Pressing and rolling machine. S. S. Knight	$^{\rm S}_{ m T}$
Disting machine	Т
Printing plates, Apparatus for tolling M. A. Droitcour Printing plates, ToningM. A. Droitcour Printing press attachmentG. E. Brannberg Printing rolls deprived of their etching or congraving their original diameter. Giving.	T
Printing press attachment. G. E. Brannberg Printing rolls deprived of their etching or	T
engraving their original diameter, Giving. P. E. Preschliu	T
Projectile, IncendiaryE. Schneider Pulp into sheets. Machine for converting	T
Pump. W. C. J. Guilford Pump. E. L. Harper, Jr.	Ť
Pump. E. L. Harper, Jr. Pump. J. Milburn	Т
Pump	T
Pump, Automobile tire. F. E. Carlson Pump, Oil force. L. F. Buehrig Pump, Vacuum. H. B. Cooley Pump valve. T. J. O'Brien Quickly adjustable bolt. A. J. Wilson et al. Quillur proching	T 3
Pump valveT. J. O'Brien	T
Quilling machine	Т
Rail fastener and combined metal and cement tie D. R. Will Rail joint J. W. Clark, Jr. Rail joint	T
Rail joint	T T T
Rail jointW. P. and S. G. Thomson Rail jointF. Gadecki	T T
Rail joint J. J. Thelen Rail joint, Laminated J. A. Bodkin	T T
Railway joint and chairA. H. Kay Railway rail, SectionalE. A. Babst	Î T
Railway rail, SectionalE. A. Babst Railway rail support. C. W. Reinoel et al. Railway rails. Anticreeping device for.	Т
Railway rails, Anticreeping device for. Railway rails to metal ties, Clamp for securing. Railway switch. Railway tie. R. E. Sebmitz Ram, Hydraulie. Razor. Rafety. Rates a Gates Razor, Safety. Reamer, Expansion. Receptacle for liquids. Railway tie. Rowice for. L. Andrews Receptacle for liquids. Railway tie. Railway tie. R. E. Sebmitz Razor, M. G. Shockey Razor, Safety. W. H. Gates Razor, Safety. L. Andrews Receptacle for liquids. O. Frohlich	Т
Railway switchW. M. Henderson Railway tieC. L. Freyert	T
Railway tie. R. E. Sebmitz Ram, Hydraulie. J. B. Courtet	T T
Razor. W. G. Shockey Razor, Safety W. H. Gates	T T
Razor, Safety (2 pats.)J. Molkenthin, Jr. Reamer, ExpansionF. O. Jagnes, Jr.	r T
Receptacle and measuring device, Combined.	ľ ľ
Receptacle for liquids	Î
Receptacle for liquids. O. Frohlich Refrigerator F. M. Smith Refrigerator linings and other purposes. Mold for J. M. Thompson Refuse, Apparatus for the removal of house	Γ
lold or otherF. Dassy]]
Rotary sintering furnaceH. C. Wolle Route judicatorJ. B. Rhodes	T T
Rubber boot and shoc	1 1 1
Refuse, Apparatns for the removal of household or other. F. Dassy Releasing device. G. H. W. Doose Rotary sintering furnace. H. C. Wolle Route indicator. J. B. Rhodes Rubber boot and shoe. H. C. Mason Rufling and stitching machine. A. H. De Voc Ruler, Rolling parallel. E. C. Holmes Sack holder. C. O'Neil Sad iron. E. H. Palmer Salt and pepper shaker. A. Hanke Sand mill. G. Mowry Saw set, Crossent. O. C. Burnham Scale. N. M. Hansen Scale, Automatically-computing weighing. A. H. Shock	ני 1 1
Sack holderC. O'Nell Sad ironE. H. Palmer	ij
Salt and pepper shaker	r
Scale Automatically computing weighing	7
A. H. Shock	7
Screw threading die. J. W. McAteer et al. Scal Vacuum. E. C. Lay et al.	7
Sealed jointR. J. Schweitzer Seed cleaner, CottonF. Phelps	7
Scale, Automatically-computing weighing. A. II. Shock Screw anchor. Screw threading die. J. W. McAteer et al. Scal, Vacuum. Scaled joint. R. J. Schweitzer Sced cleaner. Cotton. Scaled cleaner. Cotton. Scaled cleaner. Scal	-
Separator trap. E. C. Kelly, Jr. Settling tank. R. W. Dull Sewing machine. W. A. Mack Sewing machine older V. Laphascher	7
Sewing machineW. A. Mack Sewing machineW. H. Hugg	7
Sowing machine shuttle carrier	7
Serving machine trimming mechanism	7
Sewing machines, Welt-guide mechanism for welt shoe	7
Snade roll and dolder therefor, Fraguetase	1
Sharpener, DiskJ. Ogden	,
ShearsL. Craig	

Shntter	Vehicle
Sleigh-ruuner for vehicles, Removable J. Walters Sliver, CheeseJ. Blain Smoke-capJ. Pole et al. Snap-hookJ. W. Mast	Vehicle wheel
Snow ploy and rut-cutter, Combined	Vehicles, Friction driving mechanism for motor. E. G. Owen Velvet ribbons, &c., Device for renovating Litton Vending machine E. L. Robinson
Splice	Vending machine, CoinJ. A. Webster Vessels. Device for raising snnken Veterinary dental halterR. D. Speck Vibrating device, ElectricalH. N. Cupp
Stamps, L'and dating attachment for self- inking hand	Voltage of alternating enrrent machines, Regulation of the . C. A. Parsons et al. Wagon dump
Steam boiler with tubes connecting the upper and lower shells, Water tube	Water cooler
Stitch impressions, Machine for burnishing L. W. G. Flynt L. W. G. Flynt Stoker	Water sterilizing apparatnsE. Zahm Wave motorG. H. W. Doose Well drilling applianceW. E. A. Pipher Welt laying machineH. W. Winter Wheels. Manufacturing turbine bucket
R. D. Johnston, Jr. Syringe J. R. Swift Tablets or the like in piles, Appliance for clamping and transporting W. F. Boring Tag machine J. W. Howe	Whip
Tail stock. W. A. Greaves Talking machine. H. B. Babson et al. Tally box. C. Bradford Tape, Insectifngal. C. Ellis Telegraphy. I. Kitsee Telephone and telegraph wires, Guard for.	Window, Reversible (3 pats.)A. C. Soule Wire netting machine, FlatO. Schmid Woods, patchingW. C. Hobart WrenchE. L. Marshall et al. WrenchA. Petersou et al.
Telephone systemT. W. Gleeson et al. Telephone systemC. S. Wiuston et al. Temperature-controlling apparatus	Issued October 17. 1911.
Teusion regulator, Spring. J. Raber Thread cutter. J. W. Cowell Thread cutting tool, Taper. E. Borden et al. 3.6-diaminoacridinium and its salts.	MECHANICAL PATENTS. Aerial machineA. A. Wyckoff AeroplaneC. M. Wanzer Aeroplanes, Device for producing the heli-
Tic-nipper. P. Ehrlich et al. W. A. Scott Tiles with flanged edges for embedment in plaster, Apparatus for molding automati- cally ceramic. A. Weill	coidal deformation of the planes of L. M. J. C. Levavasseur Air-brake safety appliance
Tire. J. M. Abrams Tire. C. L. Rempes Tire. M. F., Jr., and L. A. Fiset Tire armor. H. J. Von der Lieth Tire, Automobile spring. N. A. Schneider Tire, Cushion. P. Schau	Air compressor, Hydraulic power
Tire, Cushion	Animal trap. F. H. Bassett Apron, Storm. E. S. Ziegler Arch support, Adjustable A. E. Wittenberg Auger, Fancet S. N. Ross Automobile W. L. Miggett Automobile cranking device J. S. Clarke
Tooth, Artificial	Automobile cranking mechanism. J. P. Pefit Automobile sleighing attachment. M. Olson Awning gearing. N. Roe Bacon hook. A. Rispel Bag holder. F. Gibbins
Transformer. F. Conrad Transformer, Outdoor. K. C. Randall Transmission mechanism. H. W. Fellows Transmission mechanism. H. Ford Transmitting apparatus. II. Shoemaker	Baling press. II. L. Whitman Balloon, Captive. W. I. Pennock Band cutter and feeder. II. Ewoldt Bank, Pocket. C. W. Martin et al. Bath accessory. F. Hess Bearings, Making ball. O. C. Knipe
Transom-mover	Bed, Double-acting wall. J. K. Pennington Bed, Hammock. E. B. Williamson Bed head rest. R. Wunning Beets, Producing jnice from II. Bosse Bett alarm
Trousers protector. T. C. Young Trowel. J. R. Morris Truck turn table II. Zering Truck, Vehicle. R. Siegfried Trunk bed and couch C. T. D. Jackson	Belt shipping device C. L. Austin Berry carrier A. Munchausen Beverages, Manufacture of fermented malt
Tug, Shaft. A. Bernsteiu Turbine. C. A. Parsons, et al. Twine holder. G. E. Chatillon Twine holding device. F. II. Generenx Typewriter carriage governor. J. Raber Typewriters and recording machines, Es-	Boat. J. E. Chnrch Boat, Ice. W. M. Stanbrough Book, Physician's account. L. Metzgar Bottle capping machine. L. Bartlett Eottle molding machines, Neck-grooving attachment for R. Johns Bottle, Non-refillable. E. B. Miles
capement for (2 pats.)J. Raber Typewriting machineS. V. Clevenger Typewriting machineM. II. Lockwood Typewriting machines. Type bar frame for S. Danielski-Bnsch Vacuum package apparatusG. Stannton	Brake head, Adjustable
Vacuum pan A. Garrley Valve J. Weinkanff, Jr. Valve H. T. Bruns Valve A. C. Stewart Valve and cut-off Reversible check	Brick facing, Metal
Valve, Automatic expansion	Brooder, Ponltry
Valve, Escape. J. D. Brower, 31. Valve, Flushing. H. R. Gilson Valve for fluid pressure brakes, Triple J. W. Robinson Valve, Gate. W. E. Crist Valve, Lever-actuated locking.	Buckle, Cross rein. W. C. Schultz Building block (Reissne). W. C. Denison Bung and fancet, Combination
Valve mechanism for steam hydranlic presses . H. A. Jensenins Vapor burner E. R. Hnber Vegetable extracts, Preparing desiccated P. Kestner	Bunion and corn protectorM. Saul Cabinet, CommodityJ. H. Boye Camera attachmentE. N. White Can containing and ponring vessel

	_
cehicle	C
enicle rnnning gear, Motor (2 pats.) D. M. Daring fehicle sleigh attachmentA. Hofacker	0
Tehicle spring suspension, Motor	0
Tehicle wheel	(
ehicles, Friction driving mechanism for motor E. G. Owen	
elvet. ribbons, &c., Device for renovating	
essels. Device for raising snnken	0
ibratiug device, Electrical	0
Tehicles, Friction driving mechanism for motor. E. G. Owen Nelvet, ribbons, &c., Device for renovating Litton	(
Washboard, Self soaping. J. R. Grumman Water cooler. P. P. Adolph	
Water distributerW. II. Heidmann Water elevatorR. Snyder Water gage II. R. Fay	
Water heater, ElectricalM. II. Shoenberg Water sterilizing apparatnsE. Zahm Waye motor	(
Water heater, ElectricalM. II. Shoehorg Water sterilizing apparatnsE. Zahm Wave motorG. H. W. Doose Well drilling applianceW. E. A. Pipher Welt laying machineH. W. Winter Wheels, Manufacturing turbine bucket I Wilkinson	(
Wheels, Manufacturing turbine bucket J. Wilkinson Whip T. W. Reed Whip socket C. V. Baker Wind shield (2 pats.) A. L. Banker Windmill E. A. Collin Window pane fastener W. Abraham Window, Reversible (3 pats.) A. C. Soule Wire nettiug machine, Flat O. Schmid Woods, patching W. C. Hobart Wrench E. L. Marshall et al. Wrench A. Petersou et al. Yarn chain unwrapping mechanism J. W. Connelly	(
Wind shield (2 pats.)A. L. Banker WindmillE. A. Collin Window pane fastenerW. Abraham	(
Window, Reversible (3 pats.)A. C. Soule Wire netting machine, FlatO. Schmid Woods, patchingW. C. Hobart	(
WrenchE. L. Marshall et al. WrenchA. Petersou et al. Yarn chain unwrapping mechanism	(
	(
MECHANICAL PATENTS.	(
	(
Aerial machine	
A. B. Leftwitch et al.	(
\text{Air-brake safety appliance}. \text{A. B. Leftwitch et al.} \text{Air compressor}. \text{Air compressor}. \text{C. J. Costello et al.} \text{Air compressor}, \text{Hydraulic power}. \text{F. P. Wilbur Air cooling device}. \text{J. A. Bergmann Airship}. \text{J. G. Maris Airship}. \text{C. E. Ritter Ammonia, Production of F. Haber et al.} \text{Appliance}. \text{F. II. Bassett}	
Air cooling device. J.A. Bergmann Airship. J.G. Maris Airship. C. E. Ritter	
Ammonia, Production of F. Haber et al. Animal trap F. H. Bassett Apron, Storm E. S. Ziegler	
Arch support, Adjustable. A. E. Wittenberg Auger, Fancet S. N. Ross Automobile W. L. Miggett	
Automobile cranking deviceJ. S. Clarke Automobile cranking mechanismJ. P. Petit Automobile sleighing attachmentM. Olson	
Awning gearing. N. Roe Bacon hook. A. Rispel Bag holder. F. Gibbins	
Ammonia, Production of F. Haber et al. Animal trap F. H. Bassett Apron, Storm E. S. Ziegler Arch support, Adjustable A. E. Wittenberg Auger, Fancet S. N. Ross Automobile cranking device J. S. Clarke Automobile cranking mechanism J. P. Petit Automobile sleighing attachment M. Olson Awning gearing N. Roe Bacon hook A. Rispel Bagholder F. Gibbins Balling press H. L. Whitman Balloon, Captive W. I. Pennock Bank, Pocket C. W. Martin et al. Bath accessory F. Hess	
Bank, PocketC. W. Martin et al. Bath accessoryF. Hess Bearings, Making ballO. C. Knipe	
Bank, Pocket. C. W. Martin et al. Bath accessory. F. Hess Bearings, Making ball. O. C. Knipe Bed, Double-acting wall. J. K. Pennington Bed, Hammock. E. B. Williamson Bed head rest R. Wunning Beets, Producing jnice from II. Bosse Belt clamp. II. H. Jones Belt shipping device. C. L. Austin Berry carrier. A. Munchausen Beverages, Manufacture of fermented malt. R. Wahl	
Beets, Producing juice from H. Bosse Belt clamp	
Berry carrier. A. Minichausen Beverages, Manufacture of fermented malt. R. Wahl	
Blower, Boller J. E. Church Boat J. E. Church Boat, Ice W. M. Stanbrough L. Metzgar	
Book, Physician's accountL. Metagat Bottle capping machineL. Bartlett Bottle molding machines, Neck-growing at-	
Bottle, Non-refillableE. B. Miles Brake head, AdjustableC. F. Murray	
Beverages, Manufacture of fermented malt. R. Wahl Blower, Boiler. Boat. Boat. Boat. Boat, Ice. Boat, Ice. Boat, Ice. Bottle capping machine. Bottle capping machine. Bottle molding machines, Neck-grooving attachment for R. Johns Bottle, Non-refillable. Brake head, Adjustable. Breathing apparatns, Portable. Brewery wastes, &c. Browery wastes, &c. F. E. Otto	
Brick facing, MetalL. Sexton Bridle attachmentE. M. Bretz Brine heating snrfaces, Means for removing incorporations of calcium sulfate from	
Brooder, Ponltry	,
Pucket cutting machine J Riddell	
Bucklet cutting machine, Universal	
Bung and fancet, CombinationE. D. Wilson R. Stock	1
Bunion and corn protector	
Can containing and ponring vessel	

Canning apparatnsJ. Dunn Car body frame construction	
Car doorA. Gillett et al. Car door construction, Grain. H. W. Drew	
Car dumping mechanism, Antomatic F. C. Greene et al.	
Canning apparatns	
Car roof H. A. Christy	
CarbureterA. Hippisley CarbureterO. C. Kreis, Jr.	
Carbureter	
Cash register. W. M. McCarthy Cash register. T. Carroll	
Caster, Ball. S. W. Bennett Cattle guard. W. W. Boatwright	
Cement block machineJ. A. Ross Centrifngal machineC. Groat et al. Chandeliers. Shock absorber for	
Checking device. H. C. Kraushaar Chute F. Gallagher	
Cigar ash holder C. S. Hoofer Cigar lighter C. Dickson	
Cigar rack. M. J. Widenhofer Cigarette. J. W. Keenan	
Circuit closer	
Clasp. W. T. Sondley Clip P. E. Shee	
Cloth stretching machine S. Birch Clothes pounder H. A. Forkner	
Coin forming machineA. H. Wonters Coin freed mechanismC. E. Hibberd Coke, Car for queuchingH, Ries	
Coke oven doorL. Wilpntte Collar shaperG. H. Spansail Collar supporterM. B. Sweigart	
Commutator-necks, Spacer and bracer for	
ical line	
Concentrator and amalgamatorR. T. Carter Concentrator tableR. T. Schraubstadter	
Concrete floor construction (2 pats.)	
Container or receptacleD. F. Anderson Cooker, Continuous process. J. C. Winters	
Cooker, Electrical Heated, L. G. Copeman Cooking utensil, Domestic O. E. Allen Copy holder F. Planert	
Core drill C. A. Terry Corner bar, Metal J. Cook Cornet F. Holton	
Corset and swimming belt chart	
Cotton chopper . A. E. Ashlimann Cotton gin J. C. Hollingsworth	
Cover and lock thereforW. H. Lutes Cow tail holderH. C. Malmstrom	
poundG. C. Richards Crank handle, DetachableL. Hayne	
Crafe, FoldingW. J. Reeser Cream separatorS. C. Anker-Holth Cross tie and rail fastener, Metallic	
Crushing machine E. J. Steekle Cultivator	
Current collector holderO. M. Shirey Curtain hanging fixtnre, Adjustable	
Centrifugal machineC. Groat et al. Chandeliers, Shock absorber for	
Davif hookD. A. Prendergast Defecating and evaporating apparatus F. P. Watrous	
Desk reminder G. W. Wright Detonating alarm H. Jones Disk fender W. A. Parker	
Display fixtureJ. W. Essex	
Dood bolt socket. S. B. Varner Door check. E. J. Kyle	
ing docks . E. D. Martin Dood bolt socket . S. B. Varner Door check . E. J. Kyle Door lock, Screen . J. N. Hermon Door stop . R. H. Lange et al. Dowcl cutting and chamfering machine	
Draft gear	
Drayer handle Bassick	
Drawers E. W. Carter	
Drill bit shaping and sharpening appara-	
Draft gear	
Dye, Diazotizable green azoA. Blank et al. DyeingM. Kahn et al. Dyeing fabricsA. Rutler	
Eaves troughL. J. Ross et al. Egg beater holderE. L. Knapp et al. Egg candler	
Elastic cord for garment supports	
Electric drop lightD. H. Taylor	
Electric heaterR. and F. Kuhn et al. Electric heater, Combination E. H. Richardson	
Electric heater, CombinationE. H. Richardson Electric lightingC. P. Steinmetz Electric machine, DynamoC. E. Lord	i
Electric switchR. B. Benjamin	

Electric switch
Electrical distribution system
Electrical switchC. L. Terry et al. Electricity meters, Removable coin actuated apparatus for use withK. Kretz Electromagnet, Alternating current (3)
pats.)
Engine
Engraving machine
Engraving machine. U. G. Lee Engraving machines, Geometric attachment for pantograph. W. H. Hope Envelop. J. Fridrich Envelop opening device. E. E. Ries Eraser cleaner, Chalk. J. A. Jones Eraser for ink, pigments, and the like
Evaporator. F. M. De Beers Exerciser, Animal F. Cousins Exercising device E. D. Angell Evaporation engine G. H. Reynolds
Explosive engineC. D. Heaton, Jr. Explosive engineH. H. Wixou
Explosive engine A. A. Low et al. Eyeleting machine W. Shaw Fabric guiding and gaging device A. H. De Voe
Fastener and sealS. Baruch Fastening inserting machine. G. A. Ambler FaucetA. Skjelstad Feather planeJ. G. De Grandmont
Fibers of kapok and other plants, Treating
brittle vegetable E. G. Stark Filling machine A. Lealand Filter Jnice W. J. Dyer
Fiftering apparatns. A. McDouald et al. Fish grip. J. Dittmar Fishing tool. J. T. Starr et al.
Floors, Machine for removing water from. T. R. Jenkins, Jr. Fluid controlling deviceH. W. Eisenbise
Flying machine. E. J. Crawford Flying machine. T. H. E. Folger Flying machine. S. S. Yarringtou
Folding brace. F. D. Turner et al.
Folding stand B. E. Walberg Foundry mold conveyer G. J. Leroux Fowls, Machine for picking feathers from
Frnit picker C. W. Smith
Furnace dnst allaying attachment
Furnace dnst allaying attachment J. W. Heid Furnaces, Ignition arch for W. M. Duncan
Furnace dust allaying attachment J. W. Heid Furnaces, Ignition arch for W. M. Duncan Furnaces with fine fuel, Apparatus for operating I. H. Moncreif et al.
Furnace arch
Furnace dust allaying attachment
Furnace dust allaying attachment
Furnace dust allaying attachment
Furnace dust allaying attachment Furnaces, Ignition arch for
Furnace dnst allaying attachment Furnaces, Ignition arch for
Furnace dnst allaying attachment
Furnaces arch. J. W. Heid Furnaces, Ignition arch for
Furnaces arch. J. W. Heid Furnaces, Ignition arch for
Furnaces arch. J. W. Heid Furnaces, Ignition arch for
Furnace arch. J. W. Heid Furnaces, Ignition arch for
Furnace arch. J. W. Heid Furnaces, Ignition arch for. W. M. Duncan Furnaces with fine fuel, Apparatus for operating. I. H. Moncreif et al. Furniture and door. Combined removable wall. N. B. Donglass Game apparatus. E. M. Lynn Game apparatus. D. H. Talbert Gapped wheel. E. G. Yeates Garbage incinerator. J. B. Harris Garment, Electric. A. C. Stubling et al. Garment bauger. T. Davis Gas and water meter tester. Combined. W. B. Hoyt Gas burner. H. Sussmann Gas burner. H. Sussmann Gas burner. H. C. Werner Gas burner, Incandescent. H. Darwin Gas cleaning apparatus. O. H. Ensign Gas engine. Compound. M. H. Sullivau Gas generator, Acetylene. J. H. Miner Gas producers, Charging means for. Gate coutrolling mechanism for openings iu buildings. F. L. Skinner Gear box, Antomatically locked. N. Roe Gear casing. J. M. Thompson Gearing, Variable speed. C. C. Spinks Ginning apparatus. E. R. Bullock Glove, Baseball. J. Gamble Gold machine, Dry process. D. M. Owiugs et al. Golf players, Training device for D. M. Owiugs et al. Golf players, Training device for Grain bin. W. Sykes Grain bin. W. J. English Grading machine W. J. English Grading machine W. J. English Grading machine W. J. English Grading machine W. J. English Grading machine W. J. English Grinder, Razor blade. M. G. Bunnell Grinder, Razor blade. M. G. Bunnell Grinding and polishing machine C. A. Will Grinder, Razor blade. M. G. Bunnell Grinding machine G. A. Reibstein Hair rat. C. N. Stephens Hammer, Pile. M. Schalscha Hand hole cover. E. J. O'Leary Hanger. O. F. Mann Harvester, Corn. T. J. Love
Furnace dist allaying attachment. J. W. Heid Firnaces, Ignition arch for. J. W. M. Duncan Furnaces with fine fuel, Apparatus for operating. J. H. Moncreif et al. Furniture and door. Combined removable wall. N. B. Donglass Game apparatus. E. M. Lynn Game apparatus. D. H. Talbert Gapped wheel. Garbage incinerator. J. B. Harris Garment, Electric. A. C. Stubling et al. Garment hauger. J. Hauser Garment supporter. T. Davis Gas and water meter tester. Combined. W. B. Hoyt Gas burner. H. Sussmann Gas burner. H. C. Werner Gas burner, Incandescent. H. Darwin Gas burner, Oil. C. C. Lillibridge Gas cleaning apparatus. Gas engine. Compound. M. H. Sullivau Gas generator, Acetylene. J. H. Miner Gas heating burner, Bunsen. Gate coutrolling mechanism for openings iu buildings. F. L. Skinner Gear box, Antomatically locked. N. Roe Gear casing. J. M. Thompson Garing, Variable speed. C. C. Spinks Ginning apparatus. E. R. Bullock Glove, Baseball. J. Gamble Gold machine, Dry process. Grading machine Grating, Automatically closing. W. J. English Grading machine Grain binder cord knotter. J. Boda Grating, Automatically closing. C. A. Will Grinding machine Grain binder cord knotter. J. Boda Grating, Automatically closing. C. A. Will Grinding machine Grain binder cord knotter. J. Boda Grinder, Razor blade. M. G. Bunnell Grinding machine Grain binder cord knotter. J. C. Mohr Gun. A. Reibstein Hair rat. C. N. Stephens Hammer, Pile. M. Schalscha Hand hole cover. E. J. O'Leary Hanger. O. F. Mann Harvester, Corn. H. C. Walker Hat pin guard. H. C. Walker Hat pin guard. H. C. M. Haddrell
Furnace dust allaying attachment. Furnaces, Ignition arch for. Furnaces, Ignition arch for. Furnaces with fine fuel, Apparatus for operating. I. H. Moncreif et al. Furniture and door, Combined removable wall. N. B. Donglass Game apparatus. E. M. Lynn Game apparatus. D. H. Talbert Gapped wheel. Garbage incinerator. J. B. Harris Garment, Electric. A. C. Stubling et al. Garment hauger. T. Davis Gas and water meter tester, Combined. W. B. Hoyt Gas burner. H. Sussmann Gas burner. Gas burner, Incandescent. H. Darwin Gas burner, Oil. C. C. Lillibridge Gas cleaning apparatus. O. H. Ensign Gas engine, Compound. M. H. Sullivau Gas generator, Acetylene. J. H. Miner Gas heating burner, Bunsen. J. Borderel Gas producers, Charging means for. N. H. Henderson Gate coutrolling mechanism for openings iu buildings. F. L. Skinner Gear box, Antomatically locked. N. Itoe Gear casing. J. M. Thompson Gearing, Variable speed. C. C. Spinks Ginning apparatus. E. R. Bullock Glove, Baseball. Golf players, Training device for. W. J. English Grading machine. W. Sykes Grain bin. Grinder, Razor blade. M. G. Bunnell Grinding and polishing machine. C. A. Will Grinding machine. J. C. Mohr Gun. A. Reibstein Hair rat. C. N. Stephens Hammer, Pile. M. Schalscha Hand hole cover. E. J. O'Leary Hanger. O. F. Mann Harvester, Corn. T. J. Love Hat block. V. M. Stzempkoski Ilat marker. H. C. Walker Hat pin guard. H. C. A. Hughes Heels of boots and shoes. Machine for com-
Furnace dust allaying attachment Furnaces, Ignition arch for W. M. Duncan Furnaces with fine fuel, Apparatus for operating. I. H. Moncreif et al. Furniture and door, Combined removable wall. N. B. Donglass Game apparatus. D. H. Talbert Gapped wheel. E. G. Yeates Garbage incinerator. J. B. Harris Garment, Electric. A. C. Stubling et al. Garment hauger. L. H. Hauser Garment supporter. T. Davis Gas and water meter tester, Combined. W. B. Hoyt Gas burner. H. Sussmann Gas burner. H. Sussmann Gas burner, Incandescent. H. Darwin Gas burner, Oil. C. C. Lillibridge Gas cleaning apparatus. O. H. Ensign Gas engine, Compound. M. H. Sullivau, Gas generator, Acetylene. J. H. Miner Gas hacting burner, Bunsen. J. Borderel Gas producers, Charging means for. N. H. Henderson Gate coutrolling mechanism for openings iu buildings. F. L. Skinner Gear box, Antomatically locked. N. Roe Gear casing. J. M. Thompson Gearing, Variable Speed. C. C. Spinks Ginning apparatus. E. R. Bullock Glove, Baseball. J. Gamble Gold machine, Dry process. D. M. Owiugs et al. Golf players, Training device for. Grading machine. Dry process. Grain binder cord knotter. J. Boda Grating, Automatically closing. C. A. Will Grinding machine M. Schalscha Hand hole cover. E. J. O'Leary Hanger. On F. Mannell Grinding machine. J. C. Mohr Gun. A. Reibstein Hair rat. C. N. Stephens Hammer, Pile. M. Schalscha Hand hole cover. E. J. O'Leary Hanger. On F. Mannell Grinding machine. J. C. Mohr Gun. A. Reibstein Hair marker. H. C. W. Steempkoski Hat marker. H. C. Walker Hand hole cover. E. J. O'Leary Hanger. C. I. May Hay knife. T. J. Maddrell Hay press. A. Tinker Hay press. C. A. Hughes Heels of boots and shoes, Machine for com- pressing the J. H. Ferrabee. Jr. Hinge. F. Graap Holster. H. E. Fonreher Holster. H. E. Fonreher Holster. H. E. Fonreher Holster. H. E. Fonreher Holster. H. E. Fonreher Holster. H. E. Fonreher Holster. H. E. Fonreher Holster. H. E. Fonreher
Fodder press. A. F. D. Turner et al. Folding brace F. D. Turner et al. Folding stand B. E. Walberg Foundry mold conveyer G. J. Leroux Fowls, Machine for picking feathers from C. W. Smith Frnit picker J. A. Pindell Furnace arch G. E. Maxlow et al. Furnace arch G. E. Maxlow et al. Furnace and stallaying attachment J. W. Heid Furnace and stallaying attachment J. W. Heid Furnaces, Ignition arch for J. W. Heid Furnaces with fine fuel, Apparatus for operating I. H. Moncreif et al. Furniture and door, Combined removable wall N. B. Donglass Game apparatus D. H. Talbert Gapped wheel E. G. Yeates Garbage incinerator J. B. Harris Garment, Electric A. C. Stubling et al. Garment hauger L. Hauser Garment supporter T. Davis Gas and water meter tester, Combined W. B. Hoyt Gas burner, Incandescent H. Sussmann Gas burner H. Sussmann Gas burner H. Sussmann Gas burner Off. C. C. Lillibridge Gas cleaning apparatus O. H. Ensign Gas engine, Compound M. B. Sullivau Gas generator, Acctylene J. H. Miner Gas hating burner, Bunsen J. Borderel Gas producers, Charging means for Sublivau Gas generator, Acctylene J. H. Miner Gas hating burner, Bunsen J. Borderel Gas producers, Charging means for Sublidings F. L. Skinner Gear box, Antomatically locked N. Roe Gear casing. J. M. Thompson Gearing, Variable speed C. C. Spinks Ginning apparatus E. R. Bullock Glove, Baseball J. Gamble Gold machine, Dry process D. M. Owiugs et al. Golf players, Training device for D. M. Owiugs et al. Golf players, Training device for D. M. Owiugs et al. Grinding machine W. K. Stephens Hamd hole cover T. J. Love Hand hole cover T. J. Love Hand hole cover T. J. Love Hand hole cover T. J. Love Hand hole cover T. J. Love Hand hole cover T. J. Love Hat block W. M. Stempkoski Hat marker H. C. Walker Hanger O. F. Graap Holster T. J. Love Hat block W. S. Tephens Hammer, Pil

Rose coupling. S. F. Estallo Climinaring decises. W. F. Gurder Control Composer. V. F. Gurder Control		
Picture exhibiting apparatus, Moving Shunt, Adjustable seriesA. J. Brown E. Schneider Picture machines, Light shield for moving. Shutter slat operator	Hydrocarbon burner. C. E. Glarfer Illmannating device. W. F. Gurley Incandescent burner. C. K. Harding Insect destroyer. L. D. Powers and the property of the property of the property of the property of the provided of the	Device for inserting O. E. Mineller Pipe centier O. E. H. G. Grand Pipe diffing O. E. M. E. G. Grand Pipe diffing O. E. M. E. G. Grand Pipe diffing O. E. M. E. G. Grand Pipe diffing O. E. M. G. Diversity of the property of

Pipe cleaning machines into pipe lines, Device for inserting. O. R. Mueller Pipe connection. E. B. I., or Pipe cutter. E. Geofin Pipe ditting. O. B. Mueller + a. Pipe joint. F. H. Weather, Pipe joint. C. Die Pipe joint. T. C. Die Pipe joint C. Die Pipe winding wrench. J. J. Tague Pipe winding machine. J. J. T. Aine Planter Seed. J. H. Rogers
Pipe ditting. O. B. Mueller () Pipe joint. F. H. Weathers, Pipe joint. C. Die Brine mold. F. P. Martin
Pipe or tubing wrench. J. J. Tague Pipe winding machine. H. E. Aine Planter, Seed. J. H. Rogers Plants, Apparatns for continuously limibiat
Plow and planter, Combined lister.
Pipe mold. F. P. Martin Pipe or tubing wrench. J. J. Tague Pipe winding machine. II. E. Aine Planter, Seed. J. H. Rogers Plants, Apparatus for continuously likibiating. C. Steffeb Plow W. G. West Plow and planter, Combined lister. A. C. Lindgren Plow, Drain. G. W. Morse Plow, Gang. E. C. Curtis Plow, Wheeled. A. C. Lindgren Plow, Wheeled. A. C. Lindgren Plug, Wall. R. L. Sanderson Plug, Wall. R. L. Sanderson Plug, Wall. R. L. Sanderson Pole reversing switch and wiring system. O. R. and O. M. Simenson Post hole digging machiue. Prizeman Post hole digging machiue. W. E. Ward et al. Potatoes, Treating. C. Steffen Powder container and dispenser. T. W. Foster Power apparatus. J. Preatka Power transmitting jack. G. E. Wunder Pressure gage, Differential. W. G. Kent et al. Pressure retainer, Automatic. D. T. Johnson Printer's rule, lead, and slug cutter. Printing press. L. Bakke Printing press offset mechanism. G. J. Such Propeller. D. Crockett Propeller. D.
Polishing
Potatoes, TreatingC. Steffen Powder container and dispenser
Power apparatusJ. Preatka Power transmitting jackG. E. Wunder Pressure gage, Differential W. G. Kent et al.
Pressure retainer, Automatic
Printer's rule, lead, and slug cutter H. C. Hansen Printing pressL. Bakke
Printing press offset mechanism
Propelling apparatus, Boat. G. R. Nagier PulleyL. W. Noyes Pump for freeing water from its contained
iron, Hand F. B. K. Schnbert et al. Pump plnnger
Push button, Electric. J. L. Morrell Rail bond. I. W. Burgess Rail fastener
Rail tie and fastening Valkelberg Railway cross tie V. L. Miller Railway rail fasteuing J. F. A. Anlt Railway switch
Railway switchJ. J. Kern Railway tieJ. U. Johnston et al. Railway tie, CompositeH. J. Buell
Railway tie replacerB. S. Olson Ram starter. AutomaticJ. F. T. B. Bretano
Razor guardA. De Pardo Razor, SafetyE. P. McCollom Razor stropping deviceP. J. Martin Refrigerating machineM. Leblanc Relay, Alternating current (3 pats.)
Revolving press, Seelf adjusting
Railway tie, Composite. H. J. Buell Railway tie replacer. B. S. Olson Ram starter. Automatic.
Rotary engine
Rule cutting machine. J. A. Richards Sack fastener, Safety. H. L. Lippert
Sad ironJ. A. Coogan Salt making (2 pats.)
Sash balanceE. J. O'Leary Sash constructionW. M. Goldsmith Sash fastenerR. Ware
Sash lock, WindowF. W. Chausse Saw mills, Grinding attachment for band L. D. Co. Pott
Seaffold, Folding E. Zahn Scale A. De Vilbiss, Jr. Scale W. E. Stimpson
Scale, Computing. F. M. Engelhardt Scale, Computing. C. F. Christopher Scale, Truck. E. L. Gage
Scale, WeigningA. De Vilbiss, Jr. Scoop for emptying pansR. J. Ross Screening deviceF. O. Stromborg Screw thread cutting mechanism
Seal for sectional leading in wires T. W. Frech, Jr.
Seam packing composition. Solderless can. B. H. Kaunenberg Seed linter, CottonC. H. Fulson
Seming machine
anism
Sash lock, Window. F. W. Chausse Saw mills Grinding attachment for band. J. D. Ge Bott Seaffold, Folding. E. Zahn Scale. A. De Vilbiss, Jr. Scale. W. E. Stimpson Scale. Computing. F. M. Engelhardt Scale. Computing. C. F. Christopher Scale. Truek. E. L. Gage Scale. Weighing. A. De Vilbiss, Jr. Scoop for emptying pans. R. J. Ross Screening device. F. O. Stromborg Screw thread cutting mechanism. L. F. Hart Seal for sectional leading in wires. T. W. Frech. Jr. Scam packing composition. Solderless can. B. H. Kaunenberg Seed linter, Cotton. C. H. Fulson Semirotary motor. M. J. Weber et al. Sewing machine. M. Hemleb Sewing machine. J. C. Ringe Sewing machine J. C. Ringe Sewing machine J. C. Ringe Sewing machine J. S. Johnston Sharpeuer, Skate. M. Oosdyke Shaving cup, Indicating sealed. W. Hertzberg Shaving stick holder and case, Combined.
Shaving stick holder and case, Combined. P. K. Williams Shingle sawing machine. T. M. Matthews Shock absorber. G. F. Kern Shock absorber. G. L. Robertson
Shock absorber. G. L. Robertson Shock arack. E. J. Prime Shunt, Adjustable series. A. J. Brown
Shutter slat operatorT. Thompson Shuttle attachmentG. Pavia
Sieve J. McDaniel Sifter G. McEachron Sign Illuminated A. W. and J. H. Stahl

Signaling, Subractine so nd Good. Signaling young Photon in Color.
Sink flata fi.e. t
Soft prop in is.
Sound vo
Sie dometer, Resideng., I.R. D. W., Stituting trachine, Rit Ross.
Spinning or twisting in the Topic guide for
opinions de chora, individuale de constitución
Spring tran
Spring wheel
Stalk entier and harrow, Combined
Stamp affixing machine B. Ivoc Stamping machine
Stereonticon E A Ungren et a
Street and station indicator
Street indicator
Strike plate and door antirattler, Adjustable
Suction apparatus. A. Sauer Supporting hook. J. Howard
Surgical instrumentI. A. Boffin Sweep rake E. B. Rock
Switch
Snrgical instrument . J. A. Boffin Sweep rake . E. B. Rock Switch . G. G. Stout Switch mechanism, Selective V. McPartland Switch operating device . J. J. Kern Tag, Shipping . W. N. Senseman Tail stock clamp . G. E. Greenleaf et al. Talking machine . W. H. Pumphrey Tape attachment . F. J. Bowers Telegraph, Printing . A. S. McCaskey Telegraph Printing . M. S. Ayau Telegraph system, Printing . M. S. Ayau Telegraph system, Printing . N. House Tie aud rail fastener . T. J. Spickerman Tire, Non-pnenmatic elastic vehicle Grenier Tire, Pneumatic . R. B. Gray
Tag, Shipping
Talking machineW. H. Pumphrey Tape attachmentF. J. Bowers
Telegraph, PrintingA. S. McCaskey Telegraph, PrintingM. S. Ayau
Telegraph system, Frinting. A. S. McCaskey
Tie aud rail fastenerT. J. Spickerman
Tire Preumatic R R Grav
Tire, Pneumatic. R. B. Gray Tire protector. C. R. Ragsdale Tire valve, Pneumatic. W. C. Wetherholt Tire, Vehicle. F. A. Schultz Tire, Wheel. F. Gallagher
Tire, VehicleF. A. Schultz Tire, WheelF. Gallagher
Tongue. SwitchE. Wadsack ToolP. E. Doolittle
Tool E. M. Hibbler Tool. Combination E. Oehrle
Toreh. BlowJ. Weintz Torpedo tube capH. Hertzberg et al.
Tongue, Switch. E. Wadsack Tool. P. E. Doolittle Tool. E. M. Hibbler Tool. E. M. Hibbler Tool. E. Oehrle Toreh, Blow. J. Weintz Torpedo tube cap. H. Hertzberg et al. Toy badge. J. J. Meehan Toy, Educational L. B. Lewis Toy vehicle. C. M. Bartholomew Train order deliverer F. Dutcher Trap. A. Norstebon et al. Trolley grand and finder H. E. Bayer Trolley Overhead J. H. Howard Trolley wheel A. C. Sloan Trombone lock A. E. Kingler
Train order delivererF. Dutcher
Trolley guard and finder H. F. Payer
Trolley, OverheadJ. II. Howard
Trombone lock A. E. Kingler Truck W. Z. Haight
Truck. R. W. Rosebrough Truck. I. M. De Pew
Tronley wheet A. C. Stoan Trombone lock A. E. Kingler Truck W. Z. Haight Truck R. W. Rosobrough Truck I. M. De Pew Trunk lock J. G. Keene Truss W. Jones Trussed structure A. J. Bates Trussed structures Making A. J. Bates
Tube ends, Clamp for tightening elastic II. Schubart Tube making machines, Severing mechanism for
forF. C. Osborn
Tug and buckle, HameC. T. Sheppard
Turpentine cnpJ. M. Towns Typewriting and similar machine.
Typewriting mahcineP. D. Du Pont
Typewriting machines, System of type levers forA. Futternecht
Type written headings, Device for centering E. Schwartz
Valve. J. D. Robertson
Uuderreamer. J. M. Delmore Valve. J. D. Robertson Valve, Cut-off. J. D. Buckalew Valve, Gate. G. Hanley Valve gear for finid pressure engines Valve gear, Link motion. N. K. Rensland Valve grinding apparatus. W. L. Milner Valve releasing tool. C. Billhoff Valves, Mechanical movement for engine. J. S. Shields Vapor buruer. W. A. Hare Vaporizer. C. C. Riotte Vehicle brake for use on hay racks L. Brown
Valve gear Link motion N K Rensland
Valve grinding apparatus. W. L. Milner Valve releasing tool
Valves, Mechanical movement for engine. J. S. Shields
Vapor buruer W. A. Hare Vaporizer C. C. Riotte
Vehicle brake for use on hay racksL. Brown
Vehicle seat spring supports, Extension standard for P. H. Schwartz Vehicle wheel M. C. Schwab
Vehicle wheel E. S. Bottomly
Vehicle wheel E. S. Bottomly Vehicle wheel A. C. Huckelbridge Vehicle wrench
Vessel elevator, MarineH. Barlow Vessel MetallicL. O. Brown
Vessel Metallic L. O. Brown Vessel ventilating apparatus, Submarine
Voting booth A. D. Albrecht Wagon, Dump W. A. Underhill Wagin running gear. E. H. Wegger
Wagin running gear F. H. Weaver Warp stop motion A. Kean
Washing machine F. T. Flinchbaugh
Wagn running gear. F. H. Weaver Warp stop motion. A. Kean Washing and drying machine. H. Schaub Washing machine. F. T. Flinchbaugh Washing machine. J. V. Kranebiel Water cooler. F. Conly et al. Water meter, Turbine F. Ray Wave motor. A. Heuckendorff Well drill. S. D. Wham Wheel G. J. Bradbury
Wave motor. A. Heuckendorff Well drill S. D. Whom
Wheel
Wind wheel mechanismW. Zelnik Winding frameJ. McCrea

The Most Valuable Techno-Chemical Receipt Book Published

Hemey's Twentieth Century Book of RECIPES
FORMULAS
AND PROCESSES

Edited by GARDNER D. HISCOX, M. E.

Price, \$3.00 Cloth Binding \$4.00 Half Morocco Binding 800 large Octavo (6 x 9½) Pages.

contains over 10,000 Selected Scientific. Chemical, Technological, and Practical Recipes and Processes, Including Hundreds of

so-called Trade Secrets for every business.

To present here even a limited number of the subjects which find a place in this valuable work would be difficult. Suffice to say that in its pages will be found matter of intense interest and immeasurable practical value to the scientific amateur and to him who wishes to obtain a knowledge of the many processes used in the arts, trades and manufactures, a knewledge which will render his pursuits more instructive and remunerative. Serving as a reference book to the small and large manufacturer and supplying intelligent seekers with the information necessary to conduct a process, the work will be found of inestimable worth to the Metallurgist, the Photographer, the Perfumer, the Painter, the Manufacturer of Glues. Pastes, Cements, are Mucil ages, the Compounder of Alloys, the Cook, the Physician, the Druggist the Electrician, the Brewer, the Engineer, the Foundryman, the Machinist, the Potter, the Tanner, the Confectioner, the Chiropodist, the Manicure, the Manufacturer of Chemical Novelties and Toilet Preparations, the Dyer, the Electroplater. the Enameler. the Engraver. the Provisioner, the Glass Worker, the Goldbeater, the Watchmaker and Jeweler, the Hat Maker, the Ink Manufacturer, the Optician, the Farmer, the Dairyman, the Paper Maker, the Wood and Metal Worker, the Chandler and Soap Maker, the Veterinary Surgeon, and the Technologist in general.

Among the Recipes given are:

Bleaching. Etching and Engraving
Recipes for Glass Making, Paper Making
Recipes for Ointments
Mirror-Making Formulas
Paint Making Formulas
Gilding and Galvanizing Recipes
Bronzing, Tinning and Silvering Recipes
Recipes for Adhesives
Plating and Enameling Recipes
Cleaning Processes, Soap Making
Leather and its Preparation
Recipes for Alloys, Recipes for Solders
Photographic Formulas
Shoe Dressing and Stove Blacking Recipes

Rust Preventive Recipes

Recipes for Lubricants and Oils
Recipes for Dyes, Colors, and Pigments
Recipes for Dryers and Inks
Recipes for Artificial Gem Making
Jewelers' and Watchmakers' Recipes
Household Formulas
Waterproofing, and Fireproofing Recipes
Recipes for Cements, Glues, Mucilages
Recipes for Fireworks
Alcohol and its uses
Recipes for Essences and Extracts
Dentifrice, Cosmetic, and Perfume Recipes
Tanning Recipes
Metallurgical Formulas
Hair Restorers, and Depilatories

And many thousands more-Equally Important in the Arts and Manufactures

A GREAT BARGAIN \$1.75 Value for \$1.00

One Year's Subscription for McCall's Magazine, Any 15-Cent McCall Pattern you may select, One Year's Subscription for The Inventive Age.

ALL FOR ONLY

\$1.00









McCall's Magazine

Is a large, artistic, handsomely illustrated hundred-page monthly magazine. It contains sixty new Fashion Designs in each issue. Every woman needs it for its up-to-date fashions, entertaining stories and complete information on all home and personal topics. Over one million subscribers. Acknowledged the best Home and Fashion Magazine. Regular price, 5 cents a copy. Worth double.

McCall Patterns

Are so simple you cannot misunderstand them. Absolutely accurate. In style, irreproachable. You may select, free, any McCall Pattern you desire from the first number of the magazine which reaches you. Regular price, 15 cents.

The Inventive Age.

A journal of manufacturing industry and scientific progress. The indispensable paper for patentees. Contains matter and information not found elsewhere. Regular price, \$1.00 per year.

Address: THE INVENTIVE AGE Publishing Co., Washington, D. C.

The DIAMOND

SELF-FILLING AND SELF-CLEANING

Fountain Pen.

IT IS AWAY AHEAD
OF ANY OTHER PEN
MANUFACTURED BECAUSE OF ITS SELFFILLING AND SELFCLEANING FEATURES.





Price \$2.00.
Including one year's subscription to "The Inventive Age."

No Lost Time.

No Solled Fingers.

Address ---

INVENTIVE AGE PUB'L. COMPANY, WASHINGTON, D. C.

SEND FOR OUR FREE CATALOGUE OF BOOKS FOR INVENTORS AND MECHANICS.

6







